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Shadows and Straws

IN HIS ADDRESS at the University of Pennsylvania, where the honor of Doctor of Fine Arts was conferred upon him, as mentioned elsewhere in our columns, Dr. C. Howard Walker said, in part:

"Art, which is the crowning glory of the world of the senses, is also the helpmate of man's thought. It is his creation, and his alone, and his willing servant. By it he sends a lambent message down the ages portraying the intimate recesses of his soul. It records his aspirations, his dawning ideals, and finally his achievement, indisputable. Whether he will it or not, art is persistently his companion, for he can not carry any of his material work beyond the point of utility without its appearance. For it is subtle, insidious, insistent, appearing as embellishment long before it masters man's expression. Therefore art is essential to the life of man, as his universal and most readily comprehended medium of expression, and his chronicle of the past and his prophecy of the future. * * * * *

"Art has a power of gravitation forming nodes of influence for good and for evil. Each work of art has its aura, which shapes opinions and stimulates thought. It can give pleasure even akin to pain; it can soothe; it can challenge or sound a clarion for war, or for peace. A Raemaker cartoon was said to have the value of an army corps. A great work of art is an epitome, a culmination of desire. With what humility and with what temerity is the teaching of so God-like a thing as art to be approached. Are the doors of its sanctuary to remain casually open, or shall the portals be guarded by knowledge and reverence? Is this Hesperian fruit, in which lies the purest pleasures, the subtlest visions and an omnipresent power, to be gained with slight endeavor?

"The varieties of art are as numerous as those of man himself. The earliest expression is that of man's love and fear of nature, which mould his moods and form his fancies, and which he deifies by his imagination. He worships the universe of which he is a part, studies its laws and produces science; observes and portrays its multifold treasures, arranges and transmutes them and in his turn creates, and this achievement is art. In contradistinction to the analysis of his scientific research he epitomises nature in art, and says in a word what it has taken her æons to relate. Blake's morning stars that sing together embrace the entire firmament. The Hermes of Praxiteles knows the secret of life and is serene in that knowledge.

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"Our years are not numbered by decades, but by centuries. If we were offered the wealth of the ages, not merely as opportunity, but in accomplished fact, if the glory that was Greece and the splendor that was Rome should be proffered to us for the asking, is it conceivable that we should consider it of little importance in our lives? It is this inestimable offering with which art welcomes us. Accept it, with joy, and the horizon broadens to the illimitable, the heavens rise above us to infinite depths. Accept it, with praise, and our hearts are stirred at the memorials to heroism, we bow before the poignant anguish of Calvaries, and are awed in the fanes of religion as in the presence of Deity. Everywhere the work of man's mind and hand in the past is an inspiration to the present. The man in the streets of Thebes and of Phigalia is but a name, a drop melted into the sea of humanity, but the work of the artists of Karnak and of the frieze of the Apollo temple lives, and is still a power. No wonder the Greek potter signed his work and added *kalos enei* (it is good). That was not conceit, but was pride in the knowledge of skill and accomplishment which made the work the measure of the man. If so much has been done and so well, shall we with such an heritage do less?"

Mr. Clive Bell, the English critic, writes thus in a recent issue of the *New Republic:*

"I do not disbelieve in absolute beauty any more than I disbelieve in absolute truth. On the contrary, I gladly suppose that the proposition—this object must be either beautiful or not beautiful—is absolutely true. Only can we recognize it? Certainly, at moments we believe that we now can. We believe it when we are taken unawares and bowled over by the purely aesthetic qualities of a work of art. The purely aesthetic qualities, I say, because we can be thrown into that extraordinary lucid and unself-conscious transport wherein we are aware only of a work of art and our reaction to it by aesthetic qualities alone. Every now and then the beauty, the bald miracle, the 'significant form'—if I may venture the phrase—of a picture, a poem or a piece of music—of something, perhaps, with which we had long believed ourselves familiar—springs from an unexpected quarter and lays us flat. We are not on the look-out for that sort of thing and we abandon ourselves without one meretricious gesture of welcome. What we feel has nothing to do with a pre-existent mood; we are transported into a world washed clean of all past experiences aesthetic or sentimental. When we have picked

ourselves up we begin to suppose that such a state of mind must have been caused by something of which the significance was inherent and the value absolute. 'This,' we say, 'is absolute beauty.' Perhaps it is. Only, let us hesitate to give that rather alarming style to anything that has moved us less rapturously or less spontaneously."

"For ninety-nine out of a hundred of our aesthetic experiences have been carefully prepared. Art rarely catches us: we go half way to meet it, we hunt it down with a pack of critics. . . . . The emotion that we obtain is thrilling enough, and exquisite may be; but it is self-conscious and reminiscent: it is conditioned. It is conditioned by our mood; what is more—critics please take note—this precedent mood not only colors and conditions our experience, but draws us inevitably toward those works of art in which it scents sympathy and approval . . . . . let us admit that we do sometimes mistake what happens to suit us for what is absolutely and universally good; which once admitted, it will be easy to concede further that no one can hope to recognize all the manifestations of beauty. History is adamant against any other conclusion. No one can quite escape his age, his civilization, and his peculiar disposition."

"The fact is, most of our enthusiasms and antipathies are the bastard offspring of a pure aesthetic sense and a permament disposition or transitory mood. The best of us start with a temperament and a point of view, the worst of us with a cut-and-dried theory of life; and for the artist who can flatter and intensify these we have a singular kindness, while to him who appears indifferent or hostile it is hard even to be just . . . . . but I do think a critic should cultivate a sense of humor. If he be very sure that his enthusiasm is the only appropriate response of a perfectly disinterested sensibility to absolute beauty, let him be as dogmatic as is compatible with good breeding; failing that, I counsel as great a measure of modesty as may be compatible with the literary character. Let him remember that, as a rule, he is not demanding homage for what he knows to be good but pointing to what he likes and trying to explain why he likes it. That, to my mind, is the chief function of a critic. An unerring eye for masterpieces is of more use to a dealer than to him."

IN ANY discussion of the English Building Guilds, or of the Guild system generally, the question most often asked is for an explanation of how it is possible to work for no profit. Yet the answer is both easy and hard. It depends little upon him who answers and much upon the one who asks. The word "profit" is confusing, and indeed, it is evident to anyone who attempts a discussion of industrial questions in economic terms, that great terminological difficulties present themselves. Generally speaking we believe it would be better to say that the Guilds mainly propose to substitute a new motive in industry. They therefore set forth the hope that the present profit-making motive may be replaced by the service motive. Equally they propose the transformation of the wage-system by offering a new motive as well. But wages, profits, pay, or whatever one may call the monetary or material arrangement made with any worker in any industry, plainly imply a means of providing the wherewithal by which to live. It is this question of motive, and not of the term used to describe the pay, that is important and that of course does imply a very great change in the present system of inducing productivity.

That a theory which is based upon the supposition that men will accept new motives, or undergo such a spiritual transformation as will lead them to regard their work, whatever it may be, as a social service which they are impelled to discharge through a feeling of brotherliness such as Christ proclaimed even though he did not reduce it to a detailed application, would find ready acceptance is scarcely to be imagined. As has often been pointed out, there is no reason to believe that the fervent spirit of service which has activated the Guildsmen of England in their preachments would become the Golden Rule of industry even though the Guild theories were applied. And it is not to be denied that a Guild might become just such a monopoly as we have already experienced through capital, through labor, and through the most merciless combinations of both. But that a new motive must be found is coming more and more to be recognized. It is thus important not to be confused with terminologies, difficult as it is to adjust new meanings of old words to new ideas and points of view. Indeed, nothing is more difficult than this, and perhaps it is largely this very difficulty which makes progress so slow.

PERHAPS the following statement by Mr. Ramsay Muir, Professor of History at Manchester University, England, may help to shed some light:

"There are three main criticisms of the existing industrial system, three main explanations of the bad working of the system, as we see it today. There is a good deal of justification for each of the three.

"The first is that the State is meddling too much with industry, and is meddling in the wrong ways. The Cabinet, Parliament and the Bureaucracy are trying to deal with a multitude of industrial questions which they are really incompetent to handle. This is causing both the managers and the workpeople in industry to regard the State as in some degree their enemy. And at the same time it is causing government to neglect its proper functions, and discrediting our whole governmental system.

"The second criticism is that, in another sense, the State (as representing the community) is not meddling with industry enough, because it has failed to find the means of ensuring that all its citizens shall be justly dealt with, shall enjoy their fair share of the product of industry, and shall have a full chance of making the best of themselves.

"The third criticism is that, ever since the beginning of the industrial revolution, the mass of those engaged in industry have been in effect disfranchised; they have been cut off from direct interest and concern in the conduct and results of their work; their labor has been treated as a commodity; they have not been enabled to feel that they are citizens and partners in the industry in which they work.

"All these criticisms are valid, though they may seem to be mutually inconsistent. It is not easy to define an industrial policy which gives due weight to them all.

"The defenders of pure "capitalism" are conscious of the first of the three criticisms. But they are prone to overlook the second and third; and, while freeing industry as far as possible from State interference, they are apt to leave the interests of the workers insufficiently protected, and to fail to obtain for them their proper share in control.

"The advocates of State Socialism fix their attention on the second criticism; but they are apt to disregard the third and greatly to intensity the first, by unduly exaggerating the functions of the State and its bureaucratic agents.

"The advocates of Guild Socialism lay all their emphasis on the third criticism, but disregard the second; because their solution is to turn each industry into an exclusive trust, and thus to deprive the State of the needful power of defending the interests both of workers and consumers."

The Architects

A TALK TO CLIENTS

By PERCY E. NOBBS

FOR a hundred years we architects have been failing most conspicuously to make our public understand what we are after. This remark would furnish a text for a whole course of lectures, but we must here leave it as a bald statement. It is our hope to set before you, as clients, certain ideas as to the aims and objects of our art which may be new to some, or if not new, may at least serve a use next time you have dealings with one of us, for they are rarely acted on.

Of architects in general it may be said that all aspire more or less to be, or to be considered, artists; and it is of those whose aspiration is well founded that I have most to say. It is not my intention to say anything of styles and schools and periods, for these are inconsequent brain-spun notions which stand in the way of our understanding one another.

The architect, the client, and the public: that is my theme. Of the three, the client is the most indispensable, but the least important—a mere human link whose privileged function it is to bring architect and public face to face, and the public is very literally "the man in the street." First let us consider what the architect of today inherits from the past in his relation to client and public.

The Past

From sun-baked Nineveh to wind-swept Chicago, all down the ages, building has been an affair of organization very closely parallel in its technical arrangements to good soldiering. In Roman times, indeed, it is difficult to say whether the legion was based on the builder's yard or the yard on the legion. Labor, skilled labor, foreman, master, architect, and, behind all, the man who pays, in the one case and in the other, private, sapper, non-com., commander, staff and, again behind all, the man who pays

In happier times, before the propagandist's pen came to vie with the sword among the instrumentalities of chaos, that is to say, before the discovery of printing with movable types, there were two activities, and only two, to which all other productions were subordinated—building in peace time, and fighting in war time. Both required men of imagination to formulate the plans of action, and generals and architects were rewarded as much in fame and honor as through their recognized systems of pay, commission, spoils or graft.

While public appreciation of architects has been both fickle and variable throughout history, the function of the man whose trade is to conceive, and perhaps draw or model a new thing, a thing distinctive and unique, a thing not yet in existence, has been much the same for a thousand years—the same in the day of the Coliseum, and of the Albert Hall, of the wayside chapel at Houghton, or of the Pierpont Morgan Library in New York. General social conditions, it is true, have so wrought that, in certain places and at certain times, the architect has tended to absorb many of the functions of the master builder, like William of Sens at Canterbury, or to have forced upon him the work of an engineer, like Michael Angelo in the case of the quarries, or to owe his selection to sheer impractical pedantry, like Dr. Perrault, of the Collonade of the Louvre. But all, at any rate, who achieved architecture, had these endowments in common—imaginative power, the geometrical sense and the instinct for scale. If they have differed as practical men, as professionals, as dilletanti, it is not difficult to recognize their kinship as artists. "By their fruits ye shall know them."

Now, from the remote past up to comparatively recent times, the people who did the staff work of building were selected primarily because they were artists in the sense above described. This does not necessarily mean that they were ornamentalists, though in certain periods most of them were that also, to the delight of our eyes.

Modern Professionalism

It would be tedious to trace in detail the effect of modern industrialism on the practice of building

since "Puffing Billy" plied his noisy course on rails of wood. The whole story is summarized in a word—the advent of "competitive prices." That is the result of the industrial revolution. The professionalized architect, as we know him today, and as he differs from his predecessors, is a by-product.

What, then, is the modern architect? He is occasionally an artist himself; he often owes much to professional assistants who are. When things are *so*, there is no use wasting time, energy, sentiment and ink as *laudator temporis acti*, or beating about the bush. So let us recognize the facts, without even alleging that they are brutal and see what it all means.

The professional architect of today is not necessarily an artist, but he must be a rather clear headed, just, business man, and a fairly skilled constructor. Ingenuity will carry him farther on the road to success than artistic power, and we are discussing the successful ones. Without opportunity, the architect, whether artist or not, is as nothing. Of himself he cannot build a cottage.

Let us look into this matter of architecture from the point of view of that kind of artist who is not a dancer, nor a poet, nor a musician, nor a painter, nor an engraver, nor a sculptor; but one who delights to express in stone, wood, concrete, and such like building materials, certain spiritual things—emotional complexes, the ugly-tongued psychologists would call them—that can not be danced, or sung, or done in black on white; and let us seek better acquaintance with him.

Opportunity

Assuming him to have the instinct, the accomplishments, and the necessary training, on what does his opportunity of expression in the manner aforesaid depend—how does he get his work? Competitions, the making of himself indispensable in an older man's office, strict observances, dancing, the buying of a practice, marriage with a builder's daughter, partnership with a promoter—all these avenues to opportunity have oft been sought; and when certain elements of success (of which more later) have been part and parcel of his makeup, the avenue has led to something. But these are all avenues which, being not quite straight, the end cannot be seen from the beginning.

Indulgence in competitions—a vice akin to gambling—does not lead to a comfortable general practice, and often leads to bankruptcy—financial and spiritual. There is always a very considerable element of chance in a competition. When very fairly conducted, with professional judges, and all possible safeguards, competitions are decided on purely practical issues—cost, cubic contents, close planning, adroit connections—all which constraining considerations are as often as not destructive of such architectural potentialities as the problem might otherwise suggest.

As to making himself indispensable, blood is thicker than water, and his master's nephew, yet unborn, when that process began, may become a junior partner on completing his articles.

Church connection is a well recognized pathway towards public confidence, but the wise ones will seek to serve their congregation individually, as clients, rather than in their corporate capacity. Parsons, wardens, elders and deacons have proverbially thin business ethics where the design of extensions to the Sunday School is concerned. Few architects achieve their competence unscarred by these harpies, unless they be avowed free-thinkers, as so many great ecclesiastical architects are.

The social avenue is of course at once the pleasantest and the least dignified path to tread in search of opportunity—a variant on the commercial traveler's glad hand and "Have a cigar!" Yet many firms of architects have a dancing partner, or a sporting partner, and find the arrangement profitable. But here again there must be that very solid something already referred to in the way of special service to offer, and quite apart from the art that they profess to purvey; otherwise the useful dancing partner would soon be short of nice white ties.

As to buying a practice, the sense of the scoundrelly venality of such transactions is only dawning on the profession in Great Britain, though simony was attacked so far back as the XIVth century. The sale of architects' practices has never been at all general in America, where "goodwill" is a more personal thing than it is in Europe. An old established address in a dingy street has less advertising value on this continent than accommodation in a modern office building. The extreme case of the sale of the good will of an architect's practice by his widow is now obsolescent. Progress in architectural education, moreover, leads to more or less publicity in the discrimination between the sheep and the goats who enter the profession.

So much for the avenues of opportunity. These are not what we are seeking to disclose as the *sine qua non*, the conditional endowment on which an architect's success ultimately depends, though many of the architects and the public think they are.

The XIXth Century In England

Let us seek for further light in the history of the recent past. A critical review of the profession in England throughout the nineteenth century—tempered with justice and with mercy—reveals the fact that, of the many thousands who practised professionally, scarcely one hundred can merit the name of artist; while those who could fairly be ranked as

eminent in their art can be told off on less than ten fingers. On the other hand, some enormous and lucrative practices, coupled with the highest honors, have fallen to gentlemen of great force of character, fine scholarship and cultivated taste, whose work is wholly innocent of the divine fire.

The really great, Elmes, Barry, (Philip) Webb, Bentley, Norman Shaw, Garner, form a veritable constellation in a firmament of tallow dips. All these, individualists as they were, gave us architecture of an essentially modern kind, conforming to those great rules (so rarely learned in the schools, alas!) which ignore the differentiations and proclaim the common principles of Phile and the Propilea, the Pantheon and Chartres—and this in spite of surface pedantries. But the most curious thing about these good things done in England in the XIXth century is the vast agglomeration of "masonry brute mishandled" amidst which the treasures are imbedded. For there were many circumstances of the Victorian era which made the recognition of architectural power a slow and frosty process. Good influences were too often winter killed, root and branch. When the sincerer forms of flattery did manifest themselves as seedlings, variable winds of fashion and the gritty soil of ignorance combined to stunt the growth.

Much was built in England between 1800 and 1900, and never was a like amount of building more varied and original in thought and contrivance, yet never was the sum of architectural achievement less in its relation to the number, or importance, of building operations undertaken. The fact is, that at the end of the last century, strangely, few architects knew the art of architecture, even when it was exemplified before their eyes; while the general public's natural instinct for just appreciation had all but atrophied for lack of use, or, when discoverable, was vitiated by extraneous sentimental considerations.

Now, 1900 A. D. was not very long ago, yet when we look on the last twenty years—even allowing for the Great War's interruption—some improvement is noticeable in the appreciation of architectural effort, more especially in America. The recent publication of *popular* illustrated magazines, and volumes of current, instead of ancient architecture,—the works of Mr. Lutyens and of Mr. Platt, to single out two recent folios in the realm of domestic art—has done much to counteract the blight of style-mongering, generated by the legions of plates on the "historical styles"—unhappy phrase—and by the activities in period carpentry of the Warings, the Sloans, and other modern stage setters of the ready-made past.

The Appreciation of Architecture in America

Speaking of improvement, we said, "especially in America." Now the culture of Europe delights to patronize the culture of America, as an aunt of uncertain age acquiesces in the frivolities of a budding niece. Public appreciation of architecture usually has preceded public appreciation of literature in past civilizations. Architecture is the matter before us—let us rejoice that America begins to take pleasure and pride in something Europe has apparently outgrown. Admitting the debt to France which American architecture owes, and very fully acknowledges, there is still no comparison between the flood of genius sown in the architecture of the last twenty years in the United States and the drought-dried stream in France.

Of course America has had the wealth, and the opportunities have been unprecedented. But the point we make is not the quantitative occasion, but the qualitative results. One doubts if French traditionalism, with equal opportunities, could have done better in France. In any case, we recognize today in America a lively public appreciation of architecture, not very intelligent, not very spiritual, and rather materialistic, but quite sincere and full of promise. With all the goodwill in the world we cannot aver as much of any part of the British Empire; not even of London town. In France, cultivated public taste in architecture is no longer the active force it once was. Starvation has, as it were, reached the stage of alternate paroxysm and inanition—for positive proof look at any French villa built since 1870.

Germany

Very different was the case in the Germany of 1914. A vast material prosperity, combined with a robust increase of all national forces, had given architecture opportunities at once exuberant and profuse. With a logic which the Americans did not have the hardihood to risk, German genius, in the generation before the war, struck out in search of a modern nationalistic tradition. The experiments were, in many cases, disastrous enough. But there was a real public interest in the matter. Criticism and appreciation were not private matters between a jaundiced scribe on the one hand, and an outraged designer on the other, both unheeded of the reading public. Perhaps the German public read too much appreciative criticism, and looked too little. The bizarre, the gross, and the crudely experimental appeared, but soon gave way before the rational excellences of Messels' work and that of his great successor, Hoffman. We are of opinion still, as we were in 1914, that Hoffman's is by far the greatest individual contribution to the development of the art of architecture between 1890 and 1914. Whether the fervid building activity which was so marked a feature of German life before the War, has been brought to a dead stop, or has only suffered an interruption, it is of course

vain to guess. Certain it is, that in Germany before the War, the architect enjoyed a large, an appreciative, and, we are inclined to think, an understanding public. For it was not mere business ability, structural skill, or economic service that enabled Hoffman to extract from an elastic traditionalism the spiritual fires whose flickering light warms stone to very life. His public recognized his art as such and craved it.

The Agency

Now, when a client in the English-speaking world, whether individual or corporate, commissions an architect to design a building, the last thing he thinks of buying from the architect, or he in turn of selling, is that imponderable spiritual fire under whose warm and magic rays builded stones speak their serene consolations, passionately asseverate the everlasting melancholies, or smile indulgence on our reprobate gambols. No, what this client bargains for, and what this architect purveys, is agency—usually valued at something a little over six per cent of the cost of the work—agency to get better value in real estate than the client could do if left to his mother wit; spiritual fires are not in the bargain at all.

In detail, this agency consists in first helping the client to find out what he really wants or needs, then inducing the client to acquiesce in sketches, which he can not understand, but which purport to represent what is wanted. A great trust this, as between man and man, and recognized as worth between one and two per cent on the probable cost, which at this stage is guessed, chanced, or otherwise estimated. Working drawings are then prepared, and specifications are written, both with mechanical skill and elaboration, and a double object in every line and word: First, to enable expert valuers to make up competitive prices for the contractors who employ them, and, Secondly, should a price be accepted and the work proceed, to be adequate to show how things are done, clearly and without doubt. When the working drawings and specifications are complete, between two and three per cent on the estimated cost, or lowest tender, becomes due the architect, *whether work proceeds or not.* This arrangement obviously takes no account of possible spiritual fires. If it did, then in the case of work not proceeded with, large sums would be chargeable for moral damages to the architect—what the psychologists would call "the pains of inhibited emotional expression." That such a charge is not the practice is proof positive that architects are not paid for art, but only for agency.

But if the work goes on there begins an anxious campaign to get the contractor's organization to do the thing, to do it rightly, and do it in time. The staff orders the architect issues are largely in the form of supplementary drawings, on each and every one of which the question of excess over what is shown on contract documents may arise. The making of these drawings is, next to the sketch planning, the most fascinating part of the architect's work. He also gives general supervision. The client usually fails to distinguish between this and sitting on the job watching every brick laid. That is the function of a clerk of works, paid by the client and under the orders of the architect. Some architects profess to give this service free, as a gift, like the spiritual fire, but it is not so. They do not. There is a "joker"—but that is another story. As the work goes on, the architect computes the value of what is done, and when it is complete he checks the accounts for extras and deductions which may or may not represent additional work and authorized omissions. The client usually finds difficulty in distinguishing between additional work required by himself, and true extras, arising from errors of omission in the contract documents. He is also slow to perceive that an extra, or additional work, generally costs the architect far more than he can ever get out of it by his commission.

Some diplomatic finesse, a habit of mind usually bought by dear experience, is an essential accomplishment, when at last the accounts are squared and paid. If the contractor and the client have been successfully kept from engaging each other before the law, the architect often finds that he has incurred the suspicion of each that his mind is not judicially constituted. By that time the architect has earned his remaining two to three per cent on the cost of the work. It is due, and it is earned, often desperately. So much for professional services—agency. What of architecture?

We have followed the commission to its consummation, "My new cut ashlar takes the light," and the job is paid for, and let us suppose holds together, fulfills its functions of use and convenience, and is hygienic withal. As a rule, the question as to whether it is good to look upon does not affect the architect's fee. No doubt a client often feels that he did not fully appreciate the significance of certain lines or tints upon the sketches; and that proves that he does not, or did not then understand sketches, and that is all there is to it.

Of course, if architects were suitably remunerated for pained susceptibilities—inhibition of expression—when work did not go beyond the sketch stage, then it would be fair to penalize them when a finished building could be proved to have failed to arouse in enhanced degree those emotional complexes experienced by the client at the time he approved the sketches. It is perhaps just as well for the peace of society that this is not the practice, though gaiety suffers in consequence.

All which goes to prove beyond shadow of doubt or cavil that the art of architecture has at present no appreciable or demonstrable market value in the English-speaking world. On the other hand, agency in the skilled provision for material requirements is reasonably remunerative.

The Case from the Architect's Point of View

This brings us to the focus of our whole discussion. Let us now state the case from the architect's point view, assuming for the sake of argument, that the architect happens to be an artist as well.

The *architect-designer-artist* should have realized three things in his student days, if properly instructed: That nobody wants to pay for his *architecturally-designed-art;* that some may be found to tolerate it, however; and that a few, (chiefly of his own profession) may even appreciate some of his efforts to make stone eloquent. He would not be what he is—a member of a most exacting profession with the longest apprenticeship of all the trades of man behind him—did he not desire, with a consuming passion, to exercise, or at least attempt, the magic touch of plastic art, and on the greatest scale too, and with the most expensive of materials—stone walls and landed property. What, then, is the condition he must fulfill before he may be permitted to try his hand? It has been answered above—perfect himself in agency, and try not to lose his soul in the process. He must do good, in the economic sense, rather than harm, to the property involved in his adventures and experiments.

The bargain is like this. If, says the client, you can convince me that you are sure you can convert this place, and these stones, bricks and what not, to my purpose, more conveniently and economically in all senses than anyone else, then proceed to do it, and so earn your commission. If you can at the same time so arrange things seen, by means of your art, trade, science and mystery, that people in general will profess aesthetic satisfaction, then go ahead and do your damnedest; I don't pay you for that, and I don't fine you it you fail in that, but if I don't like it I'll never speak to you again, and shall "blast your reputation as far as my voice can carry!"

That's the implicit understanding when the architect writes that "following your call of yesterday, I shall be happy to proceed with your sketches, remuneration to be on the usual professional basis." Now, all this is perfectly right, though some architects grumble at this aspect of the world as they find it.

The Explanation

It is to be observed that architecture—the art— is not done for the client at all, and the client has therefore no reasonable right to blast his architect's reputation for anything but failure in agency, for that's all he pays for. The architect's art is a personal charity, as between himself as an artist and the "man in the street"—certain persons unknown, to whose need he seeks to minister.

> "The song I sing for the minted gold,
> The same I sing for the white monie;
> But best I sing for the stoop of meal
> That simple people given me."

Now, it would make the trade of architecture easier, and on the whole pleasanter, if clients, both individual and corporate, realized their function to be that of publishers, with the most shadowy claims to editorial control, once they have exercised their privilege of selecting their agents, or authors. It is always possible that the client may be entertaining an angel unawares; he must trust very largely to chance for that. Without opportunity to carry out works, none can prove whether he be artist, as well as agent.

As things are, on the other hand, there is only one claim that any architect may fairly advance for the privileged opportunity he seeks to use other people's walls and lands for his artistic ends, and that is sheer efficiency as a practical agent. Can he plan with an adroitness and economy never dreamed of in former generations? Can he construct with the mighty forces of modern materials scientifically used, and temper their use with some invention? Can he do these things with a cultured grace founded on tradition but not overbound thereby? Can he deal evenhandedly as between his clients and his contractors? Can he endure the sustained drudgery inevitable in the manufacture of contract drawings and specifications? If he can do these things willingly for from five to ten per cent, the question of his giving something else (if he has it to dispense, and of that he can never himself be sure) is entirely a matter between himself and his Maker.

And now we may probe a little deeper regarding this something which some architects are privileged to dispense as a free gift willingly bestowed and most of us would give if we could.

Design

The joy of design is in the *discovery of the form;* in so complex a thing as a modern building this is not achieved without very great and sustained concentration. The simple, graceful solution of harmonious plan and elevation, which looks so easy and self-evident, is usually a synthesis of very complex elements. Physical requirements, dimensions, connections, aspect, prospect, climate, materials, structural methods, traditional forms, the moods of color, and the reaction of the client's on the architect's, and

possibly on the contractor's temperament, to say nothing of the cultural development of the skill available—a little firmament to be reduced to order.

And the discovery of the form is only the beginning. If a work of art in any sense is to result, then the character, and more of the character, and yet again more character of this form must be apprehended, digested, exuded, and when realized be instilled throughout every fibre of the structure—as it is in the design of a man and of a tree.

The two great instrumentalities of the architect, out of which the souls of buildings are conjured, are called scale and proportion. The effects of scale and proportion are infinite, and can most readily be made manifest by the use of familiar forms. Experiment must necessarily be conducted with some caution in so costly an art as this. Traditional form is a mere incident, however, for mastery of scale and proportion, by any means new or old, is the ultimate technique of architecture.

But it would serve no useful purpose further to enlarge upon the technicalities of this art, when we are seeking to expound its fundamental nature. For one thing, to do so would involve us in those controversies of the rival schools of tradition which are so largely responsible for the prevailing mountains of ignorance we seek to dispel. And secondly, appreciation, and that is what art is for, was never engendered by the knowledge of means. Such science has an inevitable tendency to destroy those blessed illusions which are the ends of all the arts.

The architect is then an artist who, instead of a fiddle to play upon, or a yard of canvas to paint upon, or the back of an unpaid bill to write upon, demands acres, and square miles if he can get them, to build upon. As his stupendous materials are rarely within his means, he is forced to hire their use in exchange for such service as will give him *the necessary measure of control.* Why he does so, and whence his impulse, are not the questions before us. If it has been shown that this kind of artist pays a fair price in kind for his materials, the main object is achieved. If so, it may be inferred that he has a natural right to do with them as the spirit moves him, so long as he does not thereby diminish the price he must pay—be false to his agency. But loyal agency to his client is to be very clearly distinguished from loyal artistry to his public—the service of the man in the street.

It takes two to make a quarrel; it takes two to make love; it takes two to achieve a work of art—one to utter, one to respond. It is therefore for the client to identify himself with the man in the street if he would share this unearned increment of values. On the other hand, the architect may be very grateful to his clients for their support of his industry and experiments, for after all he can rarely know whether his work has been fulfilment of agency—in itself a very respectable claim—or the magic that can quicken the hearts of men. Perhaps that is why architects as a rule are so shy and timid in voicing their aspirations, so hungry and brutal in contesting their opportunities, in all innocence of common greed. Each child of their imaginations may be a God.

Architecture

When one walks abroad, not too much engrossed with one's destination, the faces of the passers by, and sometimes their apparel, strike on one's attention with rich diversity of impact. The vast majority in any city (unless it be a city newly seen, where all has the glamour of fresh interest) seem dull, expressionless, common, perhaps repellent. But here comes some engaging villain, or a benevolent patriarch, or perhaps some haunted fanatic, or a dear complacent matron—someone displaying character, achieving style. Analysis racial, hereditary, circumstantial, has nothing to do with the interest aroused, though it may have much to do with the interest pursued, and may also be wholly astray. What matters is that these human objects of human interest manifest character, and if the manifestation be sometimes false, that is a small affair. It is the manifestation that concerns us. As it is with people, so it is with buildings. The blank, expressionless structures that are, for the most part, mere products of faithful agency, do not touch us at the heart as we pass along. One may be called in professionally to attend the case of a building, passed a thousand times without having been aware of its existence, till invited to look it over for reconstruction. But there, in the crowd, one saw mere eyes, and again, eyes that were windows to the soul; so, among the houses one sees windows, and again, windows that are eyes.

The ultimate test of the architectural quality of a building is the answer to the question "Can it look?"—look at you, look past you, look over you or beyond you, serenely, playfully, sadly, smugly? Is the look kindly or harsh, keen or naughty, austere or proud? If it looks to you, and at you, or anyone else, in any of such ways—and whether you like the way or not, has nothing to do with the case—then be sure you are in the presence of a work of art. Someone who had to do with the construction before you was an artist, and you are his man in the street, and the least you can do is to bow and salute your new acquaintance, the spirit of his building, for this thing may become your friend on better acquaintance.

But do not make the mistake of supposing that anyone paid the artist to make the building smile or frown. We have been at pains to explain that that is a service that cannot be either sold or bought, or even be performed at will.

The Literature of Architecture[1]

By RUDOLF DIRCKS

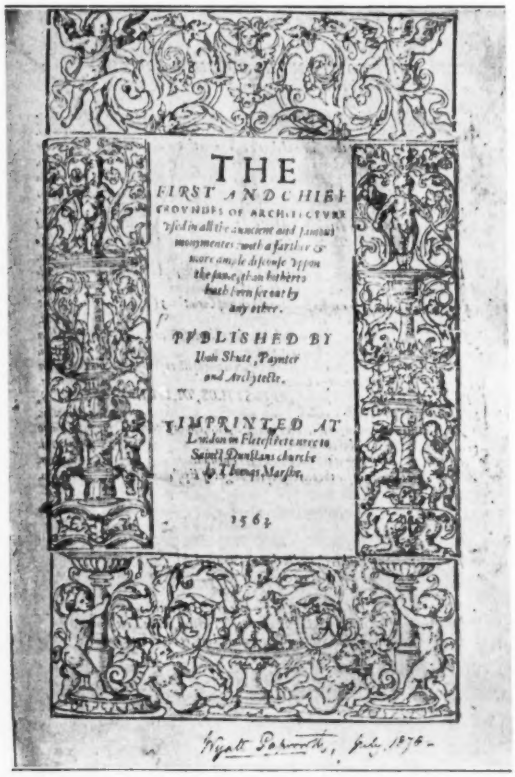
WHAT Desgodetz did for Rome, a later Professor of the French Academy, Julien David Le Roy, did for Greece in his *Les Ruines des plus beaux Monuments de la Grèce*, published in Paris in 1758. And to continue in the same line of investigation of French research in regard to ancient architecture, if we take a leap of half a century we may thank Nelson's victory over the French fleet in Aboukir Bay, which held Napoleon and his army prisoners in Egypt, for the splendid series of twenty-three volumes—13 volumes of plates and 10 volumes of text—*La Description de l'Egypte*, published by order of the Government, 1809–1822, the result of observation and research during the time that Napoleon and his army were detained in Egypt. It may have been in a spirit of emulation that later induced King Frederic William the Fourth of Prussia to instruct Lepsius in 1842–45 to undertake an equally monumental work on Egypt, *Denkmäler aus Aegypten und Aethiopien*, published in Berlin between the years 1849–59. As I have already said, the King presented the Institute copy. The sphere of French investigation was extended by L. F. Cassas to Syria by the publication in 1799 of his *Voyage pittoresque de la Syrie, Phénicie, Palestine et Basse Egypte*, which was supplemented at a later period by the Count de Vogüé in his *Syrie Centrale*, published in 1865, and by Flandin and Coste, Texier, Perrot and Chipiez, and other authors.

The Library is well stored with the French works published during the nineteenth century. As I have already mentioned, one of the first gifts to the Library was a series of the works of Percier and Fontaine, the architects most typical of the style of the First Empire. Sauvageot, Rouyer and Darcel, Texier, Ramée, Chapuy, Revoil, Choisy, Viollet-le-Duc, Berty, Palustre and many other distinguished authors are all represented. There are many links between French architects and authors and the Institute collection, but I shall confine myself to mentioning one (I have already spoken of Garnier's presentations). This is connected with Charles Félix Marie Texier, a writer familiar to all students of the architecture of Asia Minor for his archæological and architectural discoveries, delineated in three folio volumes (1839–49) *Description de l'Asie Mineure*, for the publication of which the Chamber of Deputies voted the sum of 100,000 francs. The Chamber also provided funds for the publication in 1842–52 of a later work, *L'Arménie, la Perse et la Mésopotamie* (two folio volumes). His last work *Byzantine Architecture*, completed in collaboration with an English architect and archæologist, R. P. Pullan, was published simultaneously in English and French in 1864. During his researches in the East, Texier made a large number of drawings, and collected a great deal of information that has not been published. In 1867, the year in which he received the Royal Gold Medal of the Institute, he presented to the Library much of this unpublished matter, contained in five bulky folio volumes of drawings, and two volumes of manuscript. Four of the volumes of drawings contain plans, elevations, sections and details of Sancta Sophia and other mosques and buildings at Constantinople, as well as draughtsman's notes, general views, either in water-color or pencil, and sketches of Turkish types, illustrating the manners and customs of the people, and incidents, such as a man swallowing a sword or a man being hanged. The fifth volume of drawings takes us farther East, to Asiatic Turkey, to Persia and Mesopotamia. The manuscripts comprise miscellaneous matter, of which probably the most important are the pages devoted to Constantinople and archæological descriptions of districts in Asia Minor. The drawings are known to most authorities on the architecture of Constantinople.

With Texier I shall turn from French to English books, but before doing so I should like to remind students of the scholarly restorations by the *anciens pensionnaires* of the French Academy at Rome, who, in collaboration with distinguished archæologists, were responsible for the series of volumes dealing with Olympia, Epidaurus and Pergamos.

When we turn to England, after having glanced at the publications of Italy and France, we do not at first find the same richness and abundance. Although the Renaissance found its earliest expression in Italy, the movement no doubt expressed a universal spirit of reaction, of gradual growth, which followed the Middle Ages. But the vitality of Italy was contagious, and her influence spread rapidly, after the invention of printing, partly by the means of printed books, and partly by English travelers in Italy and Italian artists who came to this country in the sixteenth century. It may, perhaps, be assumed that the Institute Library contains a representative collection of English architectural authors: but, as has been indicated, English architects and students were not entirely dependent upon native authors for their instruction. The books of Italian and French authors were sufficiently familiar either in the original or in translation. In Italy and France we have seen that early authoritative

[1] Continued from last issue.


THE
FIRST AND CHIEF
GROVNDES OF ARCHITECTVRE
vsed in all the auncient and famous
monymentes: with a farther &
more ample discourse vpon
the same, than hetherto
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and Architecte.
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London in Flete strete nere to
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1563

Title-page (reduced) of John Shute's "First and Chief Groundes of Architecture" (1563). (R.I.B.A. Collection.)

works were by notable architects. This was not quite the same case in England. It is doubtful whether John Shute was an architect. Gerbier was a diplomat and many other things, and an architect rather by accident than by design; Sir Henry Wotton was a British ambassador at the court of Venice and the author of the phrase *peregre missus ad mentiendum Reipublicæ causa*, but he was not an architect. "For I am but a gatherer," he said, "and disposer of other men's stuff at my best value;" John Evelyn, the diarist, was responsible for a translation, giving "with all the marrow and very substance" of Fréart de Chambray's *Parallele de l'Architecture*, published in 1664 (this edition is in the Library), and Wm. Leybourn translated Vincenzo Scamozzi's *Dell 'Idea della Architectura Universale* (1700), but neither was an architect. The Library contains a very rare book, the first and only edition, of, so far as is known, the first book on architecture published in English, *The First and Chiefe Groundes of Architecture*, by John Shute, a folio volume published in London in 1563. Shute spent two or three years in Italy, and acknowledges his indebtedness to Vitruvius, Serlio, and Serlio's pupil, the Frenchman Philander, who published an edition of Vitruvius with annotations at Rome, in 1544, Paris in 1545, Lyons in 1552, any of which might have been consulted by Shute. It is even within the bounds of possibility that he may have met Philander in Italy, but Serlio was probably dead before the time of his visit, the date of which is uncertain. The title page of this very rare book is here illustrated, We know, therefore, to a certain extent, the Italian writers with whom the first English author on architecture was familiar. But we are able to gather more complete information concerning the influence of Italian and French literature from the works belonging to the library of a greater man. Inigo Jones visited Italy on two occasions. The date of his first visit is not determined, but it was before 1606; he states in the introduction to his *Stoneheng Restored* that it was in his younger years. The time of his second visit is determined by his marginal notes in the well-known copy of *Palladio* in Worcester College Library. It was in the years 1613 and 1614. Inigo Jones was too great a man to be a typical man, but there is no reason to suppose that the books in his library were exceptional possessions for a cultivated and travelled man of his time. I have already spoken of his copy of Serlio, which is now in the possession of the Institute. I am indebted to the courtesy of Mr. C. H. Wilkinson, the librarian of Worcester College Library, Oxford, for a list of books preserved in that library which contain Inigo Jones's autograph. They include the 1601 copy of *Palladio*, to which I have already referred (the famous copy with MS. annotations and drawings); De l'Orme's *Le premier tome de l'Architecture*, 1567 edition; Vasari's *Le Vite de più excellenti Pittori, Scultori e Architetti* (Florence, 1568); F. Leandro Alberti's *Descrittione di Tutta Italia* (Venice, 1588); V. Scamozzi's *L'Idea della Architettura Universale* (Venice, 1615); Torello Sarayna's *De Origine et Amplitudine Civitatis Veronæ* (Verona, 1540); Summonte's *Historia della Città e Regno di Napoli* (2 vols., Naples, 1601), *De Rebus Praeclare Gestis a Sixto Pon. Max* (Rome, 1588), and *Le Cose Maraviglose dell' Alma Città di Roma* (Venice, 1588)—the last named containing a scrap of writing which Mr. Wilkinson ascribes to Jones.

Inigo Jones was the author of only one published work, *The Most notable Antiquity of Great Britian, vulgarly called Stone-Heng, on Salisbury Plain, restored*, which was not published until after his death, by John Webb. The Library contains a copy of the 1725 edition. In this remarkable treatise Inigo Jones arrives at the conclusion that "this antient and stupendous pile" was originally a Roman temple, built after the Tuscan order.

In the drawings of the Burlington-Devonshire collection we are brought into closer touch with

From a Signed Drawing by Pierre Puget (1662–94).
(R.I.B.A. Library: Sir James Drummond Stewart's Collection.)

Jones. There are some seventy or eighty drawings, either by him or reasonably attributed to him. The Library also contains a facsimile copy of a sketch-book which Jones used in Italy during his second visit, in 1614, containing on the first page the inscription "Roma.—Altro diletto che Imparar non trovio.—Inigo Jones 1614." The Duke of Devonshire was responsible for the facsimile of which only 100 copies were produced in 1832. The Institute copy was presented by the Duke to Decimus Burton in 1836. The sketches, with one exception, are entirely devoted to figure and anatomical studies and are drawn with Jones's characteristic freedom. We have also most of the original drawings which Henry Fliftcroft made for Wm. Kent's *Designs of Inigo Jones*, published at the expense of Lord Burlington, in 1727, a volume which also includes designs by Kent and Lord Burlington.

Sir Balthazar Gerbier's two books—*A Brief Discourse concerning the Three Chief Principles of Magnificent Buildings* (1662) and *Counsel and Advice to all Builders* (1663)—throw some light on the practice of architecture in the time of Sir Christopher Wren—little duodecimo volumes which contain almost as many pages of dedication as there are of text. In the second book I have mentioned there are no less than forty—the first addressed to "The Queen Mother" and the last to "The Courteous Reader." *Een Constich Boeck van de vijf Columnen van Architecture*, by Hans Bloem, fo. Amsterdam, 1598 (the plates were reproduced in an English version in 1660), possesses some interest on account of association, because it was discovered above the ceiling joists in an attic at Wotton House, the family seat of the Evelyns—it was at Wotton where John Evelyn was born and buried. While speaking of these rare early editions I should like to mention two which, although not bearing on architecture, are not without architectural interest: these are William Lambarde's *Perambulation of Kent*, the earliest of county histories, and John Stow's *Survey of London*, of which the Library contains, respectively, the 1576 and 1603 editions.

In the latter half of the seventeenth century Dugdale published his *Monasticon Anglicanum* (1655), containing Hollar's engravings, and David Loggan his engravings contained in *Oxonia Illustrata* (1675) and *Cantabrigia Illustrata* (1676–1670) (both copies are in the Library). These books are not only interesting as records or for their engravings, but also because they were the precursors of the considerable volume of illustrated literature on our national buildings which appeared in the following century and later, and which is continually being added to. Early in the eighteenth century (1708) we have Knyff and Kip's views of great country seats, and the Library also contains James Beeverell's *Les Delices de la Grande Bretagne et de l'Irlande*, published in duodecimo at Leyden in eight volumes, containing 241 plates, as well as later works of a similar character such as Britton and Brayley's *Beauties of England and Wales* (1801–18), and Neale's *Noblemen and Gentlemen's Houses of Great Britian* (1824–9), etc.

We have numerous such works, usually remarkable for their engravings, dealing in a picturesque fashion with the buildings of other countries, of which an excellent example is Jacques Le Roy's *Castella et Prætoria Nobilium Brabantiæ*, a folio volume published at Amsterdam in 1696, with engravings by Wenceslaus Hollar, Adam Perelle, Franz Ertinger, Jacobus Harrewyn and other notable engravers of the seventeenth century.

The Institute is indebted to Mr. Lawrence Weaver (now Sir Lawrence Weaver) for two interesting contributions to the collection,—the interleaved heirloom copy of the *Parentalia*, which remained in the possession of Sir Christopher Wren's family until 1911, when it was purchased by a generous group of subscribers from Mrs. Pigott, since dead, the last surviving direct descendant of Wren; and for a copy of the third edition of Elyot's *The Boke named The Governour*, the 1546 and third edition which bears on the title page the autographs of Christopher Wren, Dean of Windsor, Sir Christopher Wren's father, and of Sir Christopher Wren himself. The interleaved copy of the *Parentalia* contains a large number of inserted engravings, in addition to the ten engravings published in the original edition, as well as numerous letters and documents in manuscript, and a few original drawings which show Wren's interest in physical and natural science. The *Parentalia* contains an original letter addressed by Wren to his son, who was traveling abroad at the time—a fatherly, gossipy letter. Independently of the *Parentalia* the Institute possesses another original letter of Wren, dated 1st December 1716, addressed to Mr. Vanbrugh (no doubt the der Vanbrugh), who at the time was Secretary to the Commissioners of Greenwich Hospital. In this letter Wren accounts for his non-attendance at a meeting of the Commission and makes suggestions with regard to matters connected with the Hospital. There is also in the Institute a drawing of a section of the dome of Greenwich Hospital, which Professor Donaldson attributed to Wren.

The eighteenth century was prolific in the publication of architectural books, and, so far as Classic architecture is concerned, they were designed on a scale and written with the authority of independent research that hitherto had been unknown in English architectural literature. In regard to national architecture there is the Vitruvius Britannicus of Colin Campbell, and those who followed him in this

Reproduced from a facsimile of Inigo Jones's Sketch-Book. (R.I.B.A. Collection.)

work,—Woolfe and Gandon, G. Richardson and P. F. Robinson,—with scale drawings of plans, sections and elevations, taking the place of picturesque or topographical views. Battye Langley's numerous books, probably the most consulted of their time belong to neither of these categories, and were misleading in many respects. There are also a number of books by architects illustrating their own designs (of which Rawlin's *Familiar Architecture* is a type), interesting expressions, for the most part of the style of the latter half of the eighteenth century. The publications of classic work were largely due to the influence of the Society of Dilettanti. The Society was founded in 1734 by "some Gentlemen who had travelled in Italy, desirous of encouraging *at home* a taste for those objects which had contributed so much to their pleasure abroad." The first book published under the auspices of the Society was the first volume of *The Antiquities of Ionia in* 1769, which developed into four volumes during this and the succeeding century; later works were *The Unedited Antiquities of Attica* (1833), and Penrose's *Investigation of the Principles of Athenian Architecture* (1851). It should, however, be remembered that prior to the publication of the *Ionian Antiquities* three members of the Society had already published independently most important works: Robert Wood's *Ruins of Palmyra* (of which we have the original drawings, no doubt the work of J. B. Barra, who accompanied Wood to the East as his draughtsman) in 1753 and *Ruins of Baalbec* in 1757, and the first volume of Stuart and Revett's *Antiquities of Athens* in 1762. In 1912 the Society of Dilettanti presented to the Institute a set of unpublished plates engraved between 1820 and 1840 and many original drawings made by the members of the Second Ionian Mission sent out by the Society in 1811. The plates were subsequently published in a folio volume under the editorship of Professor Lethaby, and form Vol. V. of the *Antiquities of Ionia* series. The collection presented by the Society also includes earlier drawings made by James Stuart and others for the Society's publications which I have mentioned. In the consideration of the publications of the eighteenth century the influence of Lord Burlington—Richard Boyle, the third Earl of Burlington—to whom I have so often referred, should also be taken into account. He brought Leoni from Italy to undertake the translations of Alberti and Palladio, and, realising from Palladio's description

Reproduced from a facsimile of Inigo Jones's Sketch-Book. (R.I.B.A. Collection.)

AMPHITHEATRE, POLA.
From the Original Water-color Drawing by James Stuart (Stuart & Revett). R.I.B.A. Collection.

of Ancient Rome that he made drawings of the classic buildings, went to Italy on a voyage of discovery, and not only found the drawings of the Roman Baths, but also drawings of Palladio's own buildings, which he brought back to England, and which now form part of the Burlington-Devonshire collection. I have already referred to Lord Burlington's publication of a selection of the drawings of the Roman Baths.

Another interesting possession of the period are the lectures, in manuscript, delivered at the Royal Academy in 1768 by Thomas Sandby, the first Professor of Architecture of that Institution.

The name of Willey Reveley is not perhaps so familiar to students as the other names I have mentioned, although he was a man of parts and edited the third volume of *The Antiquities of Athens* (1794), in which he replies with some bitterness to criticisms of Greek Architecture which Sir William Chambers had written in his work on Civil Architecture. The Library possesses Reveley's manuscript notes and criticisms on the architecture of Italy, including the cities or towns of Rome, Florence, Milan, Verona and Pisa, and a diary of a tour in Greece and Egypt, whither he accompanied Sir Richard Worsley as his draughtsman and architect. He was abroad during the years 1785 (or 1784)–1789. In the following century we have the diaries (contained in 16 pocket-books) of J. L. Wolfe, who accompanied Sir Charles Barry to Italy and Sicily in 1820, containing careful descriptions of the buildings seen on the way, and numerous delicate sketches, made either by a quill pen (the pen still remains in one of the books) or in pencil. We also have later the diary of Sir Charles Barry, containing notes and quick pencil sketches of a Rhine holiday taken in the autumn of 1842, depicting the Rhine Castles and details of buildings at Nuremberg and other places. The original manuscript of Gwilt's *Encyclopædia of Architecture* (1842) has also recently been added to the Library.

Before leaving these original manuscripts, I should like to refer for a moment to another type of document, of considerable historic interest. This consists of various books of accounts connected with Greenwich Hospital, the Horse Guards and Somerset House. The oldest of these, relating to Greenwich Hospital, include the Contract Prices for Building the Hospital and other documents (there are thirty altogether) associated with its erection in 1696.

There are also three books of accounts, described by Wyatt Papworth as "Manuscript Ledgers" connected with the building of the Horse Guards (begun in 1750) and Somerset House (1776) which are instructive as to the course of erection of these buildings, the method of carrying on the works, the prices paid for works done by "measure and value," and the names of the trades-people employed, covering the period from 1776 to 1795. They contain not only

the accounts of the masons, bricklayers, etc., but also of the artists, Reynolds, Cipriani, West and others—which recall the fact that in the early days of the Royal Academy it was housed at Somerset House.

The publication of the early volumes of the Society of Dilettanti which I have already mentioned preceded the neo-Classic revival in England, and indicated the direction to which architectural thought was turning. We have, amongst other original drawings of this period, a water-color drawing of one of the most celebrated buildings, St. George's Hall, Liverpool, by the architect, H. L. Elmes, which is here illustrated. Although there was an architectural break in the classic revival, its influence was never wholly dissipated; the tradition was continued in the classic studies of Cockerell, Pennethorne and Penrose, and by architects and archæologists in England, Germany and France. Professor Richardson in his *Monumental Classic Architecture in Great Britain during the Eighteenth and Nineteenth Centuries* has quickened interest in the architectural work of the latter half of the eighteenth century and first half of the nineteenth.

As the Institute was founded at the time when the Gothic revival was in the air, it would be surprising if the Library were not fully equipped with the literature that preceded and grew with the movement. Britton's *Architectural Antiquities of Great Britain*, and his *Cathedral Antiquities of England*, Winkle's books of Cathedrals, both in England and France, the various books on mediæval art and ornament by Augustus Charles Pugin and his son Augustus Welby Pugin, the illustrations published contemporaneously by the Brandons, and by J. K. Colling, Turner and Parker's *Domestic Architecture of the Middle Ages*, and Dollman and Jobbin's *Analysis of the Ancient Domestic Architecture in Great Britain*, the first *Discriminating History of Gothic Architecture* by T. M. Rickman—first published in 1817, and followed and improved by numerous subsequent editions—and the books of Bloxam, Parker, Paley and Sharpe are the principal works which go to make up the early literature of Gothic architecture. The collection includes many original drawings of these, including some examples of the work of Augustus Welby Pugin, and a complete set of the original drawings which J. K. Colling made for his *Gothic Details* and *Gothic Ornaments*. Since Mr. Townsend read his Paper on the Institute drawings the collection has been increased by considerable collections of the works of Wm. Burges, Norman Shaw, and Wm. Butterfield. Between the years 1840–50 there appeared concurrently the collections of lithographic plates of English domestic architecture from the drawings of C. J. Richardson and John Nash, which revived interest in the quality of early Renaissance architecture. Some forty years later, in 1894, Mr. J. A. Gotch published his well-known work, in two folio volumes, *Architecture of the Renaissance in England*, which was followed in 1901 by Belcher and Macartney's *Later Renaissance Architecture in England*, and again, later, in 1911, by Garner and Stratton's *Domestic Architecture of England during the Tudor Period*. The written history of the times covered by these works is developed in Sir Reginald Blomfield's exhaustive *History of Renaissance Architecture in England*, 1500–1800, and by Mr. Gotch in *The Growth of the English House* (1909), and in other works.

From a Water-color Drawing of St. George's Hall, Liverpool, by the Architect, H. L. Elmes. (R.I.B.A. Collection.)

FOUR ILLUSTRATIONS OF WALTER HAMPDEN'S PRODUCTION OF HAMLET

Settings and Costumes Designed by Claude Bragdon

Architecture and Craftsman

By W. R. B. WILLCOX.

One need not apologize, I suppose, for reflecting upon problems which beset the world today; nor for trying to see what, in his own field, may be done—little though it be—to solve them. One's first difficulty is to see things as they *are*, and not, thoughtlessly or from habit, accept statements and explanations as facts, before subjecting them to all the power of analysis at one's command. Even when conscious that truth evades one, one may be able to detect fallacy.

Men everywhere are aware of the alarming drift of population to cities. The thoughtful realize that this drift must be stopped, if a great calamity to our country is to be prevented. We may not know the causes, or remedies, for that drfit, but what shall we say of the patriotism of cities, which, through Chambers of Commerce and municipal organizations, make studied efforts to increase their populations—to entice more and still more industries to locate in them and the people to man them? What of the lusty, metaphorical cheers which arise from cities which, with each recurring census, show unprecedented growth?

Not many months ago, we were everywhere assailed by the admonition, that unless there were greater production, the country would soon face a serious situation; it was suffering from dangerous *under*-production. Yet, today, we learn that our difficulties arise from a surplus of goods. Labor, whose inefficiency was complained of as the cause of under-production, three short months ago, is now unemployed because of *over*-production.

Need we know the truth as to these conditions, three months apart, to be convinced, that if, three months ago, we were suffering from *under*-production, due to the inefficiency of labor, we are not now burdened with a surplus? Can *in*efficient labor, in so short a time, become efficient enough to change a condition of perilous want, into one of terrible plenty? And in times of plenty, should people suffer want? Also, if labor, by producing a superfluity of goods has, thereby, brought on a shocking state of *unemployment*, what more seemingly logical conclusion for it to reach, than that *in*efficiency and *under*-production are more to be desired than what engineers and economists term "efficiency" and "over-production"? When supposedly sane men accept, without analysis, reiterated statements as statements of fact, simply because they appear to emanate from some fount of wisdom, and base conclusions thereon, how shall reason prevail?

A friend likens this too prevalent habit to the experiences of babyhood, when the inarticulate youngster finally responds to the often repeated entreaty, "Say Papa! Say Papa!" and continues to say "Papa," without knowing what it means. I imagine that we grown-ups are too often brought to confusion, by thoughtlessly saying "Papa" to reiterated suggestions.

In our own field we are facing problems of changing relationships with respect to contractors, engineers, owners, our fellow-architects and workmen. Are we sure that we are not saying "Papa," in connection with some of them? What, for instance, is our attitude toward the "labor" problem? The most frequent comment today about workmen in the building industries, as elsewhere, is that they are inefficient. Our individual experiences seem to warrant it. It seems hard to get good craftsmen. We complain that workmen lack skill, or fail to use what they have. We repeat it, with the implication that the workman is to blame, without cause. Labor unions, with their rules governing the amount to be accepted as a day's work, the length of the working day, apprentice restrictions, and wage rates, have come to be regarded as organized means to demoralize production; they, therefore, must be crushed. While we hold that verdict in abeyance, as a "punishment to fit the crime," let us examine our condemnations to see, if, perchance, we are carelessly saying "Papa."

At the close of the fifteenth century, under the Guilds of England,—as Thorold Rogers records,—labor reached, *coincidently*, a degree of skill and material prosperity unsurpassed in all the subsequent years. While it would be unwise to assume, that this was due to the existence of the guild system, it does suggest that workmen's attitudes vary greatly with circumstances, and that they must be examined fearlessly, if we would hope to formulate a basic remedy for present evils. There must be discoverable causes for these attitudes of workmen, as there are causes for the attitudes of business and of professions. Can we discover them?

Workmen are human beings, subject to wants and desires not unlike those of architects; nor do their moral and ethical qualities differ from them greatly, if at all. The first incentive to labor,—common to all people,—is the desire for things which minister to physical wants, but that is an annoying prelude to real enjoyment of life. People, generally, do not live to eat, nor to wear clothes; they do these things in order that they may engage in activities which give zest to life, which stimulate the imagination, which waken the creative faculties, which win satisfactions in the sense of accomplishment,—in the sense of having performed to the best of one's abilities.

In our own work, as architects, we know that happiness and contentment are measured, chiefly, by the nearness of approach we make to our ideals. If annoyed by repetition of hackneyed problems, our sole compensation is a material reward, devoid of any gratification of creative enthusiasms. In fact, the less interesting the task, the more importance we attach to material rewards. It is on that basis that, for a long time, we have established our charges. Greater returns for the less interesting jobs are expected to yield an average, which, when the more inviting opportunities come, shall permit us to indulge a natural wish to test our skill, without concern for material wants. Many an artist, many a craftsman, has endured want, that he might respond to this finer impulse. It is the opportunity to develop and to demonstrate the best that is in him, that calls forth the greatest strength of purpose, the higher qualities,—the reward for which is sense of accomplishment, of personal power, of *individuality*. Thus, life yields a joy, for which material rewards but cheaply compensate. How exasperating, how dispiriting, then, a life where one's daily task strikes no spark of mental, emotional, or spiritual elation!

That, however, is the situation with respect to the vast majority of workmen in the building industries, under

conditions of employment in force today. What incentive to production, then, exists for him? Just one. To "get the money,"—the same, single motive that inspires all business. If wage increase be thwarted, then shorter hours, or continuous employment secured by reduction in the number of available workmen, is striven for. Under the system of "business for profit," the workman certainly has not received more and more consideration as a human being. He has come to be seen solely in the light of an instrument of production,—a machine. If he is skillful and *quick*, well and good, but quick he must be, because slowness saps profits.

For a generation, I have been an interested observer of the evolution of the contract system. Under that of "day's work," as it was called, contractors sought, certainly, to accomplish their tasks at the least possible cost, consistent with good work. But as owners expected to pay the necessary costs of producing *good work*, a high standard of workmanship,—not low production cost,—was the *sine qua non*, in estimating the contractor's capacity. However, upon the more general adoption of the contract system, these attitudes on the part of owners and contractors underwent a gradual change, which became clearly apparent, only after a period of years had made analysis, in the light of experience, possible. As specifications encompassed more and more the quality of work desired, the owner assumed that the latter would be forthcoming, at whatever figure he could get a contractor to undertake the work for,—finally using competitive bids to coerce him.

The contractor, to secure the work, reduced his allowance for profits, which, once the job was initiated, he hoped to recoup by similar competition among sub-contractors and by reduced wages to workmen. The whole emphasis from top to bottom, came to rest upon the item of cost. The architect, from serving as a supervisor of construction,—to see that a building developed in accordance with the design,—became more and more, a superintendent, with responsibility of seeing that the *quality* of the work and materials was as specified. He became a watchman, whose duty it was to see that the owner was not cheated,—a sort of detective of secret economies in violation of the specifications.

I recall how, some years ago, in a school building requiring a large amount of oak panelling, I condemned certain panels three and four times, finding them after one condemnation put into the work elsewhere, which I was able to detect by use of a private mark unknown to the contractor. This contractor was esteemed a reputable, honest man by members of the school board, who were disposed to laugh at what they regarded as a clever piece of business. I am sure, however, that I would have been censured, had I not detected the trick. But, for architects, the depths were sounded, when some unscrupulous owner suggested that the architect cheat the contractor in the owner's interest, by exacting, as final interpreter of the specifications, more than the latter covered.

This low-cost poison penetrated to every corner of every business connected with the building trades; originating in friction, often concealed, between owner and contractor, it affected the sub-contractor, the material dealer, the manufacturer, and at the end of every channel of the industry, it settled upon the workman. He, through economic necessity, was driven to "speed up," to accept less wages, to work longer hours. The slogan of the whole institution,—which seemed to be to "get by," to "put it over,"—got into *his* blood. Why should his aim be higher? And the costs which the owner thought to save because of a low figure, the architect worked out in his capacity as sleuth. The relations of all parties concerned suffered an appalling change; from those of mutual trust and cooperation, to those of distrust and antagonism,—the latter, where possible, concealed under cover of simulated good-fellowship.

What was the workman's reaction to this state of affairs? To those above him, there was open the chance of repairing contingent losses at the expense of the next in order below. But with the workman, the end of the series was reached. There were none upon whom he could shift a loss. His alternative was to fight back. That he proceeded to do. Where there were unions, he tried to enlarge and strengthen them; where lacking, he organized them. Periodic spasms of strikes and lockouts occurred. At no time in later years, have the building industries been free from their demoralizing consequences.

Had the unions made their fight against the real cause of the trouble, instead of against its obvious effects,—if they had been wise enough, and able, to attack the *inefficiency* of the system, a system which, from its very nature, degraded both work and men,—they might have gone far toward correcting its defects, or having it "ditched" altogether. Instead of that, they chose, or were forced, to accept battle on the low ground of seemingly selfish interest—increase of wages and shorter hours, with which to gratify what is generally believed to be a naturally lazy nature.

It is just such selfish interest which today is said—and often seems—to actuate the unions. The public has accepted the ground of their choice as the real ground of contention, and, in consequence, as a general thing has given them little sympathy and less unprejudiced consideration. With what result? A generation of workmen has been educated in the vicious school of "business for profit," where, by example and by word of mouth, they have been taught every trick of inefficiency and irresponsibility, and every mood of despair.

There comes to mind the case of a Belgian ironworker. An architect, in quest of a man able to execute some delicate wrought iron ornament, having heard of his skill, called upon him at his shop. Laying the design before him, he asked the man if he could do the job. With an indifferent glance at the drawings, he returned a casual, "Yes, when do you want it?" and went on with the work in hand. His manner was so unpromising that the architect said: "Well, see here! I was sent to you because you could do good work and took an interest in what you did, but I confess, you don't seem to take much interest in this. I want the best job I can get,—you can take all the time you need to do the job, to satisfy yourself it is the best you can do. Nobody is going to make anything out of it and the owner is going to pay you himself,—the only stipulation is that you make the work as beautiful as you can."

The man had stopped his work and was looking at the

architect as if he didn't believe his ears,—then he half exclaimed, half inquired: "Do you *mean* it?" Reassured, he passed his hand over his brow, as if to brush away an idle dream and ejaculated: "My God! It's always, 'How soon can you have it? How much will it cost? Hurry, hurry, hurry! Make it cheap!' "

He did the work. He wrought as lovely a bit of iron work as came from the anvils of the Renaissance. You may be astonished to hear,—though I doubt it,—that his curt indifference, his nervous impatience, changed, while he worked at it, to flaming enthusiasm and radiant joy. Days, nights and Sundays were alike to him. He had, again, become an individual.

What, then, is to be done about the matter? Is the fight between labor unions and employers to continue forever? By such measures shall we develop real craftsmen, real artists,—when all interest and ambition to do good work is sucked out of them in the vortex of this terrible current of modern business, and leaves them devoid of that most precious thing—INDIVIDUALITY?

I do not presume to offer a remedy; the case is not so simple as these unqualified remarks might make it appear. But I am confident that before we can even make a start to find it, we must, with the utmost patience, tolerance and earnestness, quit saying "Papa" and *think;* quit battling the windmills of symptoms and give serious consideration to the ultimate forces that make them go round.

Who Discovered the Rules of Perspective?[1]

By BEN J. LUBSCHEZ.

The observation and study of the natural phenomena of perspective date back to ancient times; the understanding of the graphic processes of perspective as known today dates back about two hundred years although some of these processes were understood a century earlier. Much earlier than this, for in the scratchings and drawings on bones of the Later Paleolithic period—35,000 to 15,000 years ago, we find evidence of some cognizance of the simpler perspective phenomena. So the first observation of perspective effect is lost in the dim obscurity of a very remote past. It is as old as attempts to draw from nature.

The fundamental phenomenon of perspective is the formation of the image of an object on a real or imaginary transparent screen, the picture plane, by points where it is pierced by lines from the eye to the various points on the object when it is looked at through the screen. In fact, early investigations of perspective, such as Dürer's, were made by drawing on a sheet of glass or other transparent screen, what could be seen through it. The word "perspective," meaning literally to see or look through, is derived from this phenomenon, which was recognized in the fifth century B. C.

In the introduction to Book VII of Vitruvius, we find that:

"Agatharcus, at the time when Aeschylus taught at Athens the rules of tragic poetry, was the first who contrived scenery, upon which subject he left a treatise. This led Democritus and Anaxagorus, who wrote thereon, to explain how the points of sight and distance ought to guide the lines, as in nature, to a centre; so that by means of pictoral deception, the real appearances of buildings appear on the scene, which, painted on a flat vertical surface, seem, nevertheless, to advance and recede."

Vitruvius is not clear as to whether the scenery itself or the treatise of Agatharcus inspired the Greek philosopher, Anaxagorus, to write of perspective, but the latter is quoted as writing that," . . . . . in drawing, the lines ought to be made to correspond, according to a natural proportion, to the figure which would be traced out on an imaginary intervening plane by a pencil of rays proceeding from the eye, as a fixed point of sight, to the several points of the object viewed." Thus it is seen that the basic phenomenon of perspective was clearly understood.

As far as we know, the treatise of Agatharcus referred to by Vitruvius was the first investigation of the mathematics of perspective and the scene which Agatharcus painted for the tragedies of Aeschylus in the fifth century before Christ, were the first perspective drawings, that is, the first drawings laid out according to rules of perspective rather than merely copied from nature.

We are quite sure that these scenes were in parallel perspective and it is quite easy to see why even if anything about angular perspective were known, which is doubtful, it would not be wanted for these scenes. Being viewed from different parts of a theatre—from different points of station rather widely separated, parallel perspective offers less distortion, the planes parallel to the picture plane showing as well from one station point as from another.

Little about the theory of angular or two-point perspective was developed in the twenty-two centuries after Agatharcus (5th century B. C. through the 17th century A. D.), although several elaborate treatises on parallel or one-point perspective appeared. Many paintings of the Renaissance, however, show a keen observation of angular perspective in nature. A notable attempt to analyze the theory of angular perspective was made by Albrecht Dürer, the famous engraver, in 1525. His attempt, as well as others of the period, as well illustrated in a book by a successor of Dürer's, Jan Vredeman de Vries published in 1630, was a scheme to lay out angular perspective on an elaborate network of squares drawn in parallel perspective, an elaborate scheme of plotting or craticulation. Jan Vredeman de Vries, however, employs an assumed horizon and gives the rule for finding vanishing points.

Parallel or one-point perspective was well understood by the Romans. The wall paintings of Pompeii (first century A. D.), were certainly not drawn directly from nature and were laid out in reasonably accurate one-point perspective. It is mystifying to think that the great painters and architects of the Renaissance in Italy did not evolve the rules of angular perspective; that the great mind of Leonardo da Vinci, who understood the phenomena of perspective well and who also realized that perspective was a mathematical as well as graphic process, did not discover any rules for drawing in angular or two-point perspective. Leonardo had great regard for perspective. In the preamble to his discourse on the subject, he says:[2]

[1] Chapter XIII of "Perspective" published by D. Van Nostrand Co. New edition now in press.

[2] "Leonardo da Vinci's Note Books," McCurdy's translation, Chas. Scribners Sons.

"Perspective is the bridle and rudder of painting." Again later that: "Perspective is a rational demonstration whereby experience confirms how all things transmit their images to the eye by pyramidal lines. By pyrimidal lines I mean those which start from the extremities of the surface of bodies and by gradually converging from a distance arrive at the same point; the said point being, as I shall show, in this particular case located in the eye, which is the universal judge of all objects." Leonardo da Vinci's notes were made early in the sixteenth century. Other masters of the Renaissance wrote on and taught the subject, but all their theories were based on one-point perspective. In 1693, Andrea Pozzo wrote a profound treatise in Latin, elaborately and beautifully illustrated, but covering the theory of parallel perspective only. Pozzo's book was translated into English by John Stuart in 1807, and even the translation is a delightful book to peruse. Some of the illustrations, parallel perspectives of the undersides of domes projected on horizontal picture planes are really amazing.

The Renaissance brought forth many treatises on perspective by Italian, French, Dutch and other artists, but it remained for an English *mathematician*, Dr. Brook Taylor, a follower and ardent admirer of Sir Isaac Newton, to lay down concisely in 1715, *all* the fundamental rules upon which the science of perspective is based. Dr. Taylor's treatise in its first edition contained only 42 pages, 12mo. and 18 small plates. It may be interesting, perhaps, to quote the heading and preface of Dr. Taylor's book: "*Linear Perspective or, a New Method of Representing justly all manner of objects as they appear to the Eye in all Situations.*

"In this Treatise I have endeavour'd to render the Art of Perspective more general, and more easy, than has yet been done. In order to do this, I find it necessary to lay aside the common Terms of Art, which have hitherto been used, such as Horizontal Line, Points of Distance, etc., and to use new ones of my own; such as seem to be more significant of the Things they express, and more agreeable to the General Notion I have formed to my self of this Subject.

"Thus much I thought necessary to say by way of Preface; because it always needs an Apology to change Terms of Art, or any way to go out of the common Road. But I shall add no more, because the shortness of the Treatise itself makes it needless to trouble the Reader with a more particular Account of it."

Dr. Taylor evidently seemed to think that he wrote a treatise on art, but his book is a collection of clean-cut mathematical theorems, brief and general and not wasting itself over minor or easily deducible details. For this reason the book was criticized as too brief and too obscure, and it is easily conceived how dry and difficult it must have been to those who needed its lessons most,—painters and draftsmen. Soon lengthy expositions based on Taylor's fundamentals began to appear. Indirectly based on these fundamentals, they are still appearing, for every text-book on perspective published in nearly two centuries is a descendant of Taylor's "Essay on Linear Perspective." A most interesting elucidation of Taylor's book was published in England in 1774 by Thomas Malton. Instead of the original 42-12mo. pages, Malton's book contained 350 quarto pages and goes into minute details. Interesting indeed are the engraved illustrations, many of which have flaps so pasted that they may be folded up to make actual models of the planes involved.

From the time of Taylor and Malton to the present day, there have appeared many score treatises on perspective, in all civilized countries, in different languages, and of varying scope and value. Conspicuous among modern books are the French treatise of M. Joseph Adhémar published in 1846 and the American book by Prof. William R. Ware, first published in 1883.

Correspondence

To the Editor of The Journal:

Under the column headed "Correspondence" in the May issue of The Journal there appeared a letter from Mr. Atterbury which was referred to by an editorial comment, in which it was stated that Mr. Atterbury hoped that it might lead to discussion.

In summarizing his statement which has to do primarily with the curtailment of output, Mr. Atterbury concludes with: "The truth is that in the present so-called 'housing hold-up'—in which the capitalistic owner is usually picked as the object of attack—it is really the laboring man's pocket that is being picked and the problem is to clearly demonstrate who is doing it." But the preceding statement ran to show that the curtailment of output was due primarily to the action of organized labor.

So that one may be pardoned, therefore, for presenting evidence which runs to indicate that the condition of which Mr. Atterbury complains springs from the action of others as well. As bearing upon this point, an editorial in the New York Globe of May 17, 1921, may prove illuminating:

"SOMEBODY PROFITEERED"

"Nineteen dealers in masons' materials pleaded guilty two weeks ago to conspiracy to violate the Donnelly anti-trust law. Judge Davis sentenced them yesterday to pay a fine of $500 each. The penalty was light—in fact, was no penalty at all if the operations carried on by the nineteen men were even moderately successful—because, as Judge Davis explained, there was no evidence that the accused had practiced oppressive methods or had profiteered."

"Wright D. Goss, president of the Empire Brick and Supply Company, who was one of the men fined, had been charged, in testimony before the Lockwood committee, with controlling the price of brick in the metropolitan area. If the court says that he didn't profiteer he probably didn't, but this does not alter the fact that at some stage in the transference of brick from the producer to the consumer there has been scandalous profiteering by someone. Before the war brick was sold on the New York docks for $5.75 a thousand. Last fall, when the housing shortage was literally a public menace, the same grade of brick was sold for $25 a thousand. During the same period the cost of brickyard labor increased (on the showing of Mr. Goss himself) from 83 cents a thousand to $2 a thousand, and the total cost of manufacture, freight, unloading, lumber, fuel, towing, etc., from $3.06 a thousand to $7.60 a thousand.

"The pre-war margin above these costs was $2.69 a thousand whereas the margin last fall was $17.40. When brick in New York City at the job site was $31 a ton it was $22 in Pittsburgh, $20 in Indianapolis, $18 in San Francisco, $17 in Denver, and $16 in Chicago. If Mr. Goss and his associates did not profiteer, some one else did, and in doing so they did an injury to every resident in Greater New York who has bought a house or paid rent during the last twelve months."

To the point, also, is a graph published in the New York Times of May 1st showing the curve traced by prices of building and labor.

But it is at best a gratuitous activity to engage in matching examples of charging all that the traffic will bear so long as this practise underlies our system of production and distribution. What should interest us—and what might serve our purpose—is an understanding of how the modern industrial system works as a whole.

Concerning both cause and remedy Mr. Atterbury's statement expresses the concensus of opinion among the "best minds." Let it be granted that trade union tactics, as they bear upon the processes of production and distribution, work out in a restriction of output and higher prices. But before we may deal with this phase of the matter we must find out whether or not trade union tactics are peculiar to the Trade Unionist. The point of immediate concern is: Has he adopted a peculiar outlook and a peculiar technique which differentiates him from his fellows?

So let us take a look at what is going on in the world of business. Scan the columns of the daily press or the financial journals; what serves as the center of interest and the point of concern? Is it privation and need, or is it the matter of price? We refer to privation and need as a matter to be deplored; but there is no serious thought of relieving the situation except by action which will render it financially profitable so to do. That is to say, our technological ability to produce and distribute a sufficient quantity of needed goods has nothing to do with the (modern) case. It is altogether a matter of price.

For do we not read that "the world supply of cotton (or what not) hangs on price?" Meaning, of course, that if for any reason the price falls a smaller acreage will be planted and that, as a consequence, the world will be short of cotton and cotton goods. Which is to say, it is not what the world requires that determines the volume of production; it is the matter of price. In order to sustain prices we may have to hold our supplies in storage—and we may have to reduce the acreage planted. The organized (business) technique of accomplishing this is to issue (e. g.) credit against cotton in storage; or not to pick the cotton. To insure favorable price conditions in the future the planters are advised that credit will be advanced with respect to next year's crop only upon conditions that a smaller acreage be planted.

At the present time the farmers in the wheat growing area are endeavoring to secure credit so that wheat may be held in storage in order to bring about a reduction of the supply upon the market and thus to sustain prices. How to control, by a concerted move, the acreage planted in order to sustain prices is, at the present time, a matter of greater concern than the common welfare in Christendom.

A rumor to the effect that there is likely to be a fall of prices throws the brick yards, the coke ovens, the blast furnaces, the lumber mills, the cotton mills and so on upon a part-time basis, or closes them down altogether. The dairymen and the distributors of milk get together and arrange for decreased production in order to sustain prices. It is better to turn the milk into the streams or to feed it to the pigs, though there be not enough to drink, than to allow prices to fall. Sometimes it is a good business move to plow in the crops and to let the harvest rot on the ground.

That such is the common practise is not to be denied; the daily news items tell us all about it. And it all goes to show that under the regime of money and price economy the modern community is utterly unable to turn its knowledge (technological) to account for a living except at such times and in so far as the course of prices insures a differential advantage to the owners of the material equipment. It is always the question of advantageous (ordinarily rising) prices, as viewed by the owners of the capital goods, which is made to decide the matter of livelihood for the rest of the Community.

Within the field of financial business and investment, who cares about the matter of producing what the community needs? Does any one about to invest in an industrial enterprise inquire how much of this or that will be produced? Not as a rule; it is the return percent which concerns him. Does the lender of money lend only to those who promise to produce the largest volume of goods to sell at the lowest price? Does the demand for houses lead to the lending of money at lower rates of interest? Does it lead to the advancement upon loan of a higher percentage in relation to the price evaluation of the property? Does a strong demand for building loans operate to reduce the bonus required? Does a shortage of houses stimulate building? Only in the event that the building of them promises higher pecuniary rewards than is to be secured by doing something else.

What Mr. Atterbury proposes is that those who work for wages should somehow detach themselves completely from the existing industrial system which is completely controlled by the exigencies of the quest for gain in terms of price. He proposes that labor should go to its work under the guidance of a workmanship impulse while the rest of us go on after the almighty dollar. Possibly labor may be induced to take such a stand.

In his pursuit of the matter Mr. Atterbury picks up a trail which takes him away from reality and leads on to the land of dreams. For he remarks that—"The situation is fundamentally unchanged since the pioneer built his own cabin." It would seem from this that the development of the machine, involving specialization of work and process; that our system of banking, providing unlimited credit expansion; that the capitalization of intangible assets and prospective earnings; that the world market—it would seem, according to Mr. Atterbury, that all this has no bearing in the case of the modern workman. But to leave all this out of account is to leave out of account the reasons why it is that whereas the pioneer built his *own* cabin, now the workman may on condition, build a slum, a part of which he may rent.

All this may appear to have but slight bearing upon what had best be done. Yet, it may be of some value merely to suggest that it would be more to the point to examine our system of production and distribution *as a whole*—find out how it operates under the (modern) regime of money and price economy. Mr. Atterbury has contributed by indicating how labor acts to restrict output with a view of securing higher prices for what it has to sell. But who, among those who engage in business, which controls production, does not so act? Is not the restriction of output characteristic, or more accurately, necessary action under the regime of capital? The signs certainly so indicate.

FREDERICK L. ACKERMAN.

Kitchens on the Farm

Mr. Rudolph Weaver of the Institute and of the Agricultural College at Pullman, Washington, in speaking to the Washington State Chapter about farm buildings, said:

Two hundred and eighty-eight plans for farm houses were submitted in a competition for Farm Homes conducted by his department and that of Home Economics at Pullman, but that the best product of the competition was the inauguration of cooperative relations with the Washington State Chapter.

He stated that from their experience in the competition, his committee on Farm Buildings had learned to approach the farm house problem from the kitchen for the reason that the life of the farm house is largely affected by the efficiency of the kitchen arrangements. He found that the correspondence from farmers' wives was very interesting indeed and that much valuable information which his committee was tabulating was received from this source.

Mr. Weaver insisted that the Architect must get the farmers point of view before he can even hope to approach the farm house problem.

New Members Elected

CLEVELAND: M. E. Harpster, *Akron*. ILLINOIS: Lincoln N. Hall, *Chicago*. NEW YORK: Henry Stern Churchill, Raymond McCormick Kennedy, Arthur E. Misslehurst, *New York City*. PHILADELPHIA: Frank R. Fish. SOUTHERN CALIFORNIA: Roy C. Mitchell, *Los Angeles*.

Jurisdictional Awards

The following resolution is from the report of the representative of the Institute on the Board of Jurisdictional Awards:

"On account of the reports which have reached Members of the Board, the following self-explanatory resolution was adopted:

"Whereas, It has come to the attention of the National Board of Jurisdictional Awards in the Building Industry that advertisements, contributions or subscriptions are being or have been solicited, ostensibly for the purpose of defraying the expenses of the Board incidental to the publication of its decisions, although no such solicitation has at any time been authorized by said Board;

"*Resolved*, That this Board hereby disclaims and repudiates any such action and declares that the use of advertisements in connection with the publication of any of its decisions is not only extremely distasteful but positively contrary to its wishes; and

"*Resolved*, That to prevent unauthorized or improper publication, decisions, rules and other records of the Board be copyrighted whenever published; and

"*Resolved*, That in addition to the use of the usual official channels for the dissemination of such information by the organizations members of the Board, all decisions, rules or other records that should come to the attention of the public be promulgated through an official edition in pamphlet form, without advertisement, under the auspices of the Board, at the joint expense of the several organizations represented on the Board without contribution from any other sources; and

"*Resolved*, That the widest publicity be given to the Board's sentiments with respect to this matter."

Shakespeare's Halfway House

The village of Grendon Underwood, in Buckinghamshire, straggles at haphazard along the road which used to be the main highway from Stratford-on-Avon to London. On this road Shakespeare used to come, and there is an old and fixed tradition that he spent the night at the Shippe Inn at least once, if not oftener. Aubrey, who wrote a biography of him in about 1630, and could only find fifty-seven lines to say about him altogether, states it as a "fact" that he spent the night at Grendon and took the characters of Dogberry and Verges from two village worthies who treated him roughly in the porch of the church, and also that here he found the scene for "A Midsummer Night's Dream" on the fringe of the village looking towards the woods. The estate is now being sold, and that highway is now a muddy lane, so muddy that a rhyme has been made, "Grendon Underwood, the dirtiest village that ever stood." It is far from railways and high roads now. The houses are scattered at random for almost a mile. Some are old, some are very new. Thatched roofs, well trimmed and neat, are side by side with red tiles and plaster walls. But the thatch and the green moss under the eaves and the rambling lichen are gradually being displaced by modernity, and at one end of the village a house is being built entirely of yellow bricks and slate. On each side of the road, wherever there are no buildings, is a double hedge in blossom, with white sprays and shoots, and on the grass bank between the hedges are cowslips and primroses.

The house of tradition, "Shakespeare's Farm," lies at the other end of the village from the new building near the church. A later house has been added to the old "Shippe Inn," though even the later one is old enough to have magnificent oak beams, axe-hewn, and oak floors which slope and curve, and low, narrow doors and huge cupboards. The porch is surmounted with carved stone-work and a simple coat-of-arms on a tablet. Small windows are let into the tiled roof. The Shippe Inn itself is tall and square and shaped like a dovecote with a pyramid roof. The narrow red bricks of the walls are divided into triangles and oblongs by the blackened beams which support them. Three windows are let into the front, one above the other, and the highest in the pyramid is oval in shape. And it is in this room with the oval windows that Shakespeare slept.

On the door of one of the rooms is fixed a heavy bolt of old and ponderous workmanship, perhaps as old as the house. Except for this there is nothing left but the staircase, and in a few years there will be little left at all of the Shippe Inn, for the walls are beginning to tumble outwards, especially at the back, where there is said to have been another part of the house. The cracks in the plaster have recently disclosed another tiny room next to Shakespeare's into which there is no apparent entry. Who knows that he may not have thrown away scraps of manuscript into it?

Beyond the farm lies the church where Shakespeare is said to have fallen asleep and been rudely roused by the village constable. The gravestones in the churchyard, many of them leaning over in a melancholy attitude of dejection, have long since been covered with moss and weeds. The grass grows luxuriantly among them and over them, and the lettering of many is quite illegible. There is no porch as in the days of Dogberry, and the glass in the church windows is very new.

Inside all is crumbling to dust. Gaping cracks are tearing the bricks apart, and already a large hole has been made by wind and time. The floors are patched in places, and in others a deep waits for the unwary. The stair is dark, but a lantern illuminates the wonderful carved oak of the staircase that appears strangely out of place in that ruin and decay round it.

The room under the sloping roof is small and dingy. At one side there is a curiously shaped fireplace with a wide chimney; on another the oval window which looks across the green fields and meadows to Grendon Woods and the glimpses of water beneath the hedges and the wild flowers.

A. G. M. in the *Manchester Guardian*.

THE JOURNAL *desires to make its columns valuable as a medium for an exchange of thought on all matters relating to the profession of architecture. All such expressions, whether in editorials, or otherwise, must obviously be accepted as expressions of individual opinion. Contributions are invited, all articles to be signed by the name or initials of the writer in acknowledgement of their source and the writer's responsibility.*

The Last Convention

Comment on the Convention is making its appearance, here and there. Says J. L. L. in the Boston Society of Architects Bulletin:

"Last year, if my memory does not fail me, it was the sense of the Convention that less time be taken for routine matters and that more time be devoted to Architecture and the Fine Arts in a broad sense. Why, oh why must we spend dreary hours juggling words, phrases and paragraphs of the By-Laws, at a time when we might be learning something of the work and ideals of fellow architects in different parts of the country and by a frank discussion of these works and ideals stimulate the spirit of a great profession. In this connection, however, one must note with admiration the advanced methods of the Illinois Chapter. This year the regular orators of this delegation were constantly relieved by a group of young men, in the flower of their youth, who took the floor whenever one of the veterans showed signs of falling below the average output of words per minute. It was an inspiring example of team-play, and it suggested that the members of this delegation might practice at the bar as well as at the drawing-board."

"Perhaps the session which produced more interest than any other one was that devoted to the report of the Committee on Small Houses, but when Mr. E. H. Brown of Minneapolis starts out to sell an idea, it is all over but the shouting. His unfailing good nature and his ability to explain details under a fire of cross-examination make him a winner."

"The first of the evening sessions, at which the subject of education was discussed, confirmed a growing belief that a four-year course is not long enough to produce an architect. It is interesting to note that in the discussion of the practical side in education, many architects still refer to the time-honored custom of tracing full-size details, which has in the the past furnished the principal educational opportunity for the student draughtsman and has kept him out of mischief as long as he was willing to stand for the treatment."

"The Architectural Exhibition inaugurated last year was this year most inadequately hung. In striking contrast to the formal opening last year was the opening this year. Lack of adequate space and the juxtaposition of some of the fixed exhibits of the National Museum, such as stationary gas engines, standard hospital equipment, and a section of trench manned by stuffed figures of doughboys, with real barbed wire in the foreground, under the title of 'Camouflage Exhibit of the U. S. Engineers,' took away most of the dignity and impressiveness of the exhibition."

"Last year the delegates visited the Lincoln Memorial and the Freer Museum by invitation. Today approaches and setting for the Memorial are not yet finished but some idea may be had of the final result. The great lagoon between the Memorial and the Washington Monument is still without water, although the effect of riding in a Ford on the unfinished roadways is equal to that of a sea voyage. The Freer Museum, which last year seemed on the eve of completion, is still closed and the polite but firm guardian expressed the opinion that it would probably be another year before it is open. I think these operations indicate an advance over the usual American idea that 'speed is of the essence of the contract,' no matter whether the object to be attained is one of beauty or of commercial value."

"Of course, there were interesting moments, but, as Washington is sometimes called 'the City of Magnificent Distances,' so were the distances between these moments, and after a conscientious attendance for three days and two nights, the writer and all those with whom he exchanged views, were pretty well tired out. This should not be so and I can see no reason why the Conventions of the Institute could not be stimulating rather than wearying. We elect our officers and our Board because we trust them and because we feel that they have the best interests of the profession at heart. The regional distribution of members of the Board should insure a broad point of view. Why should we not make it clear to the governing body that we expect it to consider and settle the general business of the Institute in detail and that we want the Conventions to solidify the profession by great means rather than by small ones."

In reporting to the Illinois Chapter upon his Convention experiences, Mr. Howard Shaw spoke in a not dissimilar vein, as reported in the Bulletin of the Illinois Society of Architects: "Your delegation filled about six per cent of the chairs in the Convention," said Mr. Shaw, "but we occupied about fifty per cent of the floor. I say 'we,' but figuratively I only held the coats of the gladiators while they went to it. I fear I am a hopeless failure as a delegate. I never changed a by-law in my life. In fact, I did not know anybody ever read constitutions, canons, and by-laws; I thought of them as one does of foundations which one cannot see but hopes are there. And yet it seems that the greater part of three days is spent in the exciting business of 'striking out that part of Section 122, Paragraph 3, after the words "client" and inserting, "etc., etc." Most of the changes are prefaced 'for the protection of the client or public.' I suppose this bunk is due to the proximity of the convention hall to our National Congress.

"The Canons themselves seem to be for the encouragement of honesty among the architects. If a dissatisfied owner wants to get rid of an architect, or an unprincipled confrere tries to get a job away from you, Canons of Ethics are not likely to help you. You will need a sawed-off shotgun. You cannot legislate a gentleman. Watching it tried reminds one of the alchemists of old who spent their lives essaying, by weird incantations, to turn the baser metals into gold. Personally I like to think of the Institute as a time-honored old guild of which Ictinus, Bramante, Brunelleschi, Christopher Wren, Bulfinch, and many other masters were among the early members, and where today one meets the men who are making this a better looking world, and who discuss architecture, not by-laws. I would like to have the Canons graved on old lichen-covered marble. They would be very brief,—about like this: 'Be a gentleman if you can, but for God's sake be an architect.' Time and nature dignify any creed, just as they do any structure, but nowadays we cannot let Constitutions alone, vide the 18th Amendment.

"Had Michael Angelo and Palladio and the rest of them spent their time worrying over a minimum charge, where would the Renaissance have come in? Athens could well have paid Ictinus a thousand percent commission for the

Parthenon! It is about the only thing that has kept modern Greece from sliding off the map. There are notable architects at these conventions, (there would be more if you would emphasize architecture and corral this 'business'), men whose work will go down in history. Why not let them talk of their art and leave the business end to the Board of Directors? The exhibition of contemporary work at recent conventions is a move in the right direction. Possibly a drastic reduction in the size of the delegations would expedite business, but there should be a corresponding encouragement to members to attend, for the inspiration of meeting fellow architects and seeing their work would mean real education. The alloted span of life of seventy years is not very long if the first twenty-five are spent in getting ready and the last fifteen in playing golf. It leaves only about thirty years in which to help make this a better looking world than we found it. Let us not spend that remainder in changing by-laws."

News Notes

WILLIAM Roger Greeley has been admitted to the firm of Kilham, Hopkins, Greeley, Boston.

THE SCHOOL MEDAL of the Institute at the Carnegie Institute of Technology has been awarded to Mr. Luther S. Lashmit.

ANNOUNCEMENT is made of the removal of Charles B. Meyers, from 1 Union Square to 31 Union Square, New York City.

W. R. B. Wilcox, formerly of the Boston Block, Seattle, announces the removal of his office to 358 Empire Building in that city.

WE have been asked to request any reader of THE JOURNAL having knowledge of the whereabouts of Hans (John) Frey, architect, to communicate with his father, S. R. Frey, Pine Bluff, Arkansas, R. R. 6, Box 110.

GEORGE BAINES CUMMINGS announces that as the firm of Lacey, Schenck & Cummings has been dissolved, he will continue the practice of architecture in Binghampton, N. Y.

BY formal action of the American Engineering Standards Committee, the American Institute of Architects has been admitted to membership in that body, with the right to one representative.

TENNESSEE has a registration law now in force, the particulars of which will be published in our next issue. Likewise, it is a pleasure to be able to announce that the Competition code of the Institute will govern the selection of an architect for the annex to the Tennessee State Capitol.

THE members of the Michigan Chapter had the pleasure of listening to Mr. Harvey W. Corbett, on May 25, as did also the students in architecture at the University of Michigan. Mr. Corbett spoke in relation to "High Buildings on Narrow Streets." Excerpts from his address at the Convention appeared in our last issue.

REORGANIZATION of the state Government in New York State is urgently demanded by a committee of the American Engineering Council of the Federated American Engineering Societies. Gradually it may dawn upon a nation which has clung tenaciously to the theory that politicians were competent men, that its real welfare lies in utilizing the almost inexhaustible fund of technical information and knowledge which now goes unused.

WASHINGTON State Chapter has issued the first numbers of its Bulletin, a four page sheet full of news and seasoned with a splash of humor here and there. We hope that it will add fresh laurels to a Chapter which sends its guests away with the most delightful memories and which has a list of useful activities and a roster of members such as the profession may well be grateful for. A long and happy life to the Bulletin!

THE UNIVERSITY of Pennsylvania has conferred the honorary degree of Doctor of Fine Arts on Mr. C. Howard Walker, lecturer on the History of Architecture at the School of Architecture, Harvard University, in connection with the ceremonies held in commemoration of the thirtieth anniversary of the founding of the Department of Architecture and the dedication of the new School of Fine Arts, at the University of Pennsylvania.

QUANTITY SURVEYING received unanimous recommendation from the special committee representing the A. I. A., the Engineering Council, and the A. G. C., in the report made public very recently. Each of the organizations must now act on the report separately. Readers of THE JOURNAL will remember the campaign which it organized for promoting interest in this subject, more than eight years ago, since when the Quantity Survey has made steady progress. It will be used as freely as the contract is used, some day.

ANNOUNCEMENT is requested of the following: The exhibits sent by various schools of architecture and practicing architects to the first Pan American Congress of Architects, Montevideo, Uruguay, were exhibited at the Congress. Subsequently they were transferred by the officials of the Congress to the Central Society of Architects of Buenos Aires for exhibition purposes in that city. The Institute has been advised that the exhibits will be forwarded in due course from Buenos Aires to New York, where arrangements have been made to distribute them direct to the various exhibitors.

SEVEN experts have been named by Secretary Hoover and asked to help in solving the national housing problem. They are Ira Woolson, consulting Engineer; Rudolph P. Miller, engineer in charge of building ordinances, New York City; J. A. Newlin, University of Wisconsin; J. R. Worcester, consulting engineer, Boston; William K. Hatt, Purdue University; Edwin H. Brown, Minneapolis, and Ernest H. Russell, St. Louis, of the American Institute of Architects. In his address at the Convention Mr. Hoover expressed the opinion that the problem was not one in which the Government ought to assist except as it might be able to stimulate private initiative.

ACCORDING to the Manchester *Guardian* local authorities in Great Britian have raised over £44,000,000 for housing purposes. Lancashire and Cheshire lead with a little over £8,000,000, and the Metropolitan area of London comes next about £7,500,000. Mr. Christopher Addison, of the Ministry of Health and in charge of housing has been succeeded by Sir Charles Ruthen, a well known English architect. Everywhere the hope is expressed that he will be

able to extricate the nation from the slough into which its housing schemes have fallen. The lowering of standards is well exemplified in the address of Sir Lawrence Weaver. Speaking of the housing program for ex-service men as undertaken by the Ministry of Agriculture, he told how "the descent had been slow and steady until the minimum of decency was reached." Unfortunately, this is largely true of all housing movements, due, as Sir Lawrence puts it, to "economic conditions."

A TESTIMONIAL dinner was given by the Philadelphia Chapter, on April 11 last, in honor of the fiftieth anniversary of the election of Mr. William D. Hewitt to membership in the Philadelphia Chapter. The decorations of the room were reminiscent of the early days of architectural practice, and it is said that the students who volunteered to act as waiters, were garbed as pirates! The members of the Philadelphia Chapter eagerly seized upon the occasion to testify their regard and affection for Mr. Hewitt, eloquently expressed in the last of the verses composed in honor of the occasion by Professor Laird, which was as follows:

"And so we greet you here tonight
To praise your work with all good will;
But even more to show delight
Because through times both good and ill
You've been our friend and brother still;
And well we love you, Uncle Bill."

COLUMBIA University announces a course in City Planning and Civic Art with Mr. George Herbert Gray as instructor. The prospectus states that the object is "to train men in a comprehensive knowledge of the general subject of city planning and the special subject of civic art, so that they may ultimately take their place either as cooperating specialists or as the directing head of city planning projects." Special direction in studies may be arranged for and the course will be presented through lectures, field, and drafting room work. Students will have the advantages of the equipment of the School of Architecture, including access to the Avery Library. Admission is based upon a schooling equivalent to two years of collegiate work in a recognized college, and training in design in a school of architecture or landscape architecture equal to three years' work, or an equivalent in office training. For further information, address the Secretary of the University, New York City.

THE Association of Collegiate Schools of Architecture held its annual meeting immediately preceding the convention of the American Institute of Architects, thus making it possible to correlate the work of the Association with that of the Committee on Education of the Institute. As a consequence the report on education required very little discussion of fundamentals when presented at the special evening meeting devoted to education. The Association gave as usual considerable time to the discussion of content of the curriculum and methods of teaching. The relation between cultural and the various technical courses, particularly the relation between design and construction courses, was discussed, the aim being not to over-stress one subject at the expense of others. The objective of the Association is to have its schools produce potential architects, since specialization is hardly possible in a four-year course. Any tendency to over-emphasize one subject at the expense of others cannot but react unfavorably on the profession.

The members of the Association have for some years felt that four years are not enough for both cultural and technical instruction. This year they took definite action recommending that the schools belonging to the Association publish at the earliest possible moment five year courses parallel with the present four year courses, with a view to withdrawing ultimately the present four year courses. It will thus be possible to give students more comprehensive cultural and more thorough technical training with greater emphasis on fundamentals.

The Architectural School of Yale University was admitted to membership. Officers were elected as follows: President: Emil Lorch, University of Michigan. Vice-President: William Emerson, Massachusetts Institute of Technology. Secretary-Treasurer: Clarence A. Martin, Cornell University.

The National Council of Architectural Registration Boards at one of its meetings held just prior to the Convention, discussed the standards of examination and education. The indications are that the Council will adopt an educational standard on a par with that discussed by the Collegiate Association and the Institute. It is thus proving possible to bring together all those interested in architectural education, something that has been very much needed for many years.

CONSIDERABLE discussion is going on in England as to the advisability of revising the building regulations in order to permit very high buildings. Some accounts of the question have already appeared in these columns. Recently, Mr. T. C. Horsfall, in a letter to the Manchester *Guardian*, presents some conclusions whichhave to deal with more deep-seated causes and effects than usually come to light in discussion. He says:

"I am sure that if many English people knew what has been the effect on the life of the inhabitants of large towns in France and Germany of the permission granted to the owners of land to build blocks of dwellings of five or six stories there would be a general determination not only that skyscrapers shall not be allowed in our towns, but also that tall tenement-houses shall not be allowed.

"Everyone knows that the price of land is decided by the amount of rent which its owners can obtain for it, and that therefore if owners of land are allowed to build and let houses of five or six stories their land will sell for much more than if they might only build houses of two stories, but few English people know how very great is the difference of price in the two cases. Mr. Pohlmann, who has studied the conditions of German and English towns, says that in German towns, including Berlin, the price of land before the war was eight or ten times as high as that of land in corresponding positions in English towns of about the same population. The high price of land makes rents extremely high, and the greater part of the population, except the richest class, therefore suffers much from lack of houseroom. In Berlin, which in 1905 had 2,040,148 inhabitants, 550,629 persons in that year lived in dwellings in every room of which there were from four to thirteen persons. As in many of the tall tenement blocks the

ground floor of that part of the building which adjoins the street is used for shops, a large proportion of the dwellings look into courts. In 1910 45 per cent of all Berlin dwellings were back dwellings.

"Overcrowding, due to the excessive dearness of dwellings, and insufficiency of air and light have results which are said by several serious writers to be "terrifying." In proportion to the population there had been before the war a much larger influx of healthy country people into Berlin than into London since 1870, yet London had about 30 per cent less deaths of persons from 15 to 25 years of age than had Berlin, and in Berlin the percentage of deaths from tuberculosis was half as great again as the rate in London.

"The senior vaccinating doctor in Chemnitz said some years ago that hardly any child brought to a doctor for first vaccination in a large German town is free from indications of rickets.

"It is to be hoped that owners of building land will not be allowed to Berlinize London and our other large towns."

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Structural Service Department

SULLIVAN W. JONES, *Associate Editor*
LEROY E. KERN, *Assistant*

In connection with the work of the Committee on Structural Service of the American Institute of Architects and in collaboration with other professional societies and organized bodies having the same objective—improvement in building materials and methods and better shelter for humanity in all its manifold vocations and avocations.

Abstracts

It is the purpose of the Structural Service Committee and THE JOURNAL *jointly to give in this division each month, brief abstracts of all publications by the Government Departments and Bureaus, University and other research laboratories, States and Associations, which contain fresh information in regard to materials or methods employed in construction and thus afford architects and others a convenient means of keeping themselves conversant with rapidly expanding knowledge in the technique of construction.*

Uniform Specifications for Portland Cement. (321)—The American Engineering Standards Committee has approved the revised specifications for portland cement which were agreed upon by Committee C-1 of the A. S. T. M. and the Government Departmental Committee on Cement. Only minor changes were necessary in order to eliminate slight but long standing discrepancies which had existed between these two specifications. There is now one specification covering both commercial and governmental use.

Community Buildings. (3529)—(*U. S. Dept. of Agriculture, Farmers Bulletin 1173. "Plans of Rural Community Buildings" by W. C. Mason, Assistant in Rural Organization. 38 pages 6" x 9".*) This bulletin is devoted mainly to photographs, plans and brief descriptions of rural community buildings in various sections of the country and designed to meet a wide range of conditions and needs. It also contains a brief general discussion of the main requirements for this type of building.

Identification of Oak Woods. (1912a)—(*Technical Note No. 125. Forest Products Laboratory.*) Over fifty species of native oaks assume the proportions of trees, and about twenty-five are used for lumber. After the oaks are cut into lumber, there is no means known to the United States Forest Products Laboratory by which they can be identified as to exact species. By examination of the wood alone, however, it is easy to separate the oaks into two groups—the white oaks and the red oaks; and for most purposes, fortunately, it is not necessary to classify them any further. The oaks all average about the same in strength, but those in the white oak group are much more durable under conditions favorable to decay than those in the red oak group.

The white oak group includes true white oak, swamp oak, bur oak, cow oak, post oak, overcup oak, and chestnut oak. The red oak group includes true red oak, yellow or black oak, scarlet oak, Spanish oak, Texan oak, black jack, water oak, willow oak, and laurel oak.

The color of the wood is a ready but not absolutely reliable means of distinguishing the white oaks from the red oaks. Red oaks usually have a distinctly reddish tinge, especially near the knots. The wood of the white oaks is generally a grayish brown; but occasionally a reddish tinge is found in white oak lumber.

For more accurate identification it is necessary to examine the pores of the wood. These will be found as tiny holes on a smoothly-cut end surface, the largest being visible to the unaided eye. They are not of uniform size throughout each growth ring, but are considerably larger in the wood formed in the spring, decreasing in size rather abruptly towards the summer-wood. The large pores in the spring-wood of the heart-wood and inner sapwood of the white oaks are usually plugged up with a frothlike growth called tyloses, and those of the red oaks are open. This feature, however, is not so reliable for classification as the character of the much smaller pores in the summer-wood.

To tell for a certainty whether a piece of oak belongs to the white or red oak group, cut the end grain smoothly with a sharp knife across several growth rings of average width. With the aid of a hand lens examine the small pores in the dense summer-wood. If the pores in this part of the growth ring are plainly visible as minute rounded openings, and are not so crowded but that they can readily be counted, the wood belongs to the red oak group. If the pores in the summer-wood are very small, somewhat angular, and so numerous that it would be exceedingly difficult to count them, the wood belongs to the white oak group.

Insulation of Buildings from Heat and Cold. (19g)—(*Revised from letter of Dr. Charles F. Brooks, Associate Professor of Meteorology and Climatology, Clark University, Worcester, Massachusetts.*)

Cold Floors.—The ground floor of a cellarless house is usually cold in winter. If, however, the space under the house is tighly enclosed with a thick outer wall, and if the floor is quilted or otherwise protected against rapid conduction of heat through it, the floor should be nearly as warm as the air immediately above it, and there would be no updrafts of cold air, characteristic of unquilted floors over foundations of open construction. Nevertheless, the floor would undoubtedly feel cold, for the air in contact with it is the coldest in the room. The temperature of the air under the house would tend to be about that of the ground, which is close to the mean annual temperature (about 52° F. at New York City). In cold, windy weather, the air temperature under the house would probably be lower than in calm weather, when it is warmed to some extent by radiation and conduction of heat from the warmer floor.

Attics.—The attic question is different in summer from in winter, particularly in that the undesirable condition is next to the roof in summer and next to the attic floor in winter. With efficient outlet in summer, the need for large attic space to provide against overheating of the rooms below, would be dispensed with. In winter, the larger space would be of questionable value, for the coldest air settles to the floor anyway. The specific heat of air is so small that the temperature of a large body of air in the attic would probably be about as low as that of a small body, and would change almost as fast.

Insulating attic floors.—Since attics are usually either too hot or too cold, it becomes desirable to provide effective insulation between the attic floors and the ceiling of the room below. Quilting an attic floor would probably be more worth while than quilting the *ceiling* below, for this would provide an insulating space of more or less dead air between the floor and the ceiling below.

Is Quilting the best insulator?—When quilting is used between boards or walls, it is bound to be compressed to such an extent that much of its value as an insulator is lost, though its effectiveness as a preventive of draught is not diminished. Air is notoriously a poor conductor of heat; therefore, the more air can be used as an insulator, the better. But air readily circulates when warmed below or cooled above, and to use its thermal conductivity most effectively, the range through which such convection must

take place must be confined to as small compartments as practicable; as for example, in different degrees, in Balsa wood, pumice stone, surface cooled lava, and foam of any kind. For the best heat insulation, therefore, air spaces divided into cells with but small vertical dimensions are necessary; *e. g.*, honeycomb on a side, cardboard or paper tubing laid horizontally, or even well-mussed but not crushed newspapers.

Heating of Roofs.—The heating and cooling of an attic in clear, calm weather is due almost wholly to the heating and cooling of the roof by radiation, the efficiency of a surface as a radiator being about the same as its action as an absorber. Authoritative data on the ralative heating qualities, in bright sunshine, of the various roofing materials and of paints of different colors, would be valuable to architects. For example, at Davos, Switzerland (altitude about 1 mile) the order of temperatures in boxes of different colors was from lowest to highest as follows: White, pink, yellow, green, red and black.[1] Painted steel blocks in Panama showed an order of temperature as follows: White, pink, red, yellow, green, and black.[2] Blue was not tried in either place.

Double Windows vs. *Weather Strips.*—Much of the loss of heat from houses in winter comes from conduction through windows. The air coming in contact with the windowpane is cooled, and becoming denser, falls to the floor while other warm air takes its place. Thus there is usually a continuous stream of cold air down from windows in cold weather, which no amount of weather-stripping can prevent. The value of weather strips is evident only in windy weather. Double windows, however, are as good as weather strips against strong winds, and always prevent the excessive cooling of air in contact with the inside window panes.

Orientation of Houses.—Wherever feasible, architects would do well to depart from the usual practice of making houses face directly one of the cardinal points. If the house is made to face one of the four intermediate points, SW., say, the sun will shine into all the rooms on clear days practically throughout the year, instead of only six months of the year, if it faced a cardinal point. Another consideration in laying out the house, in the eastern United States at least, is that the living room should be on the southeast side; the kitchen on the northeast, and bed rooms on the northwest and southwest. Thus, the morning sun, in winter, will heat the living room; the cold winds of winter will blow against the kitchen, which usually tends to be too warm; the afternoon sun will warm the bed rooms shortly before the time of their occupancy, and cold winds from the northwest need not be met with excessive effort to keep these rooms warm. During the hottest days of summer, the southwest winds, which usually accompany hot spells in most localities, will blow into the bed rooms. If there is a choice about the position of the longest roof slope, it will be found worth while, in regions of much snowfall in the East, to have it southeasterly. Most of the snow comes with northeasterly or easterly winds, which tend to sweep this side of the roof, and after the snowstorm, the melting of the snow would begin shortly after sunrise before the air temperature rose above freezing, and continue probably all day by virtue of the higher air temperature in the afternoon in spite of weaker sunshine on this slope.

Lime—Tentative Specifications for Masons' Hydrated Lime. (3c3)—(*Circular of the Bureau of Standards, No. 106. "Lime—Definitions and Specifications." Fifteen pages, 7" x 10".*) The following tentative specification issued by the A. S. T. M. as No. C6-19T, is recommended by the Bureau of Standards, pending the issue of a revised specification which is now being developed. For an abstract of Bureau of Standards Circular No. 30, "Lime: Its Properties and Uses," see the December, 1920, JOURNAL.

1. *Definition.*—Masons' hydrated lime is a dry, flocculent powder resulting from the hydration of quicklime.

[1] *Monthly Weather Review*, June, 1920, vol. 48, p. 351.
[2] *Ibid.*, July, 1920, vol. 48, pp. 403, 404 diagram.

2. *Uses.*—Masons' hydrated lime may be used for making lime mortar, for scratch or brown coat of plaster, or for addition to Portland cement mortar or concrete.

I. Chemical Properties and Tests.

3. *Sampling.*—The sample shall be a fair average of the shipment. Three per cent of the packages shall be sampled. The sample shall be taken from the surface to the center of the package. A 2-pound sample to be sent to the laboratory shall immediatly be transferred to an air-tight container, in which the unused portion shall be stored until the shipment has been finally accepted or rejected by the purchaser.

4. *Chemical Properties.* (a)—The chemical composition of the hydrated lime shall be determined by standard methods of chemical analysis.

(b) *Impurities.*—The sum of the silica (SiO_2), ferric oxide (Fe_2O_3) and alumina (Al_2O_3) expressed on the sample as received shall not exceed 5 per cent.

(c) *Carbon Dioxide.*—Carbon dioxide in the sample as received shall not exceed 3 per cent.

(d) *Calcium and Magnesium Oxides.*—Calcium and magnesium oxides shall constitute not less than 90 per cent of the nonvolatile portion.

II. Physical Properties and Tests.

5. *Fineness.* (a)—A 100-g sample shall leave not more than 0.5 per cent of its weight on a standard 30-mesh sieve, and not more than 15 per cent of its weight on a standard 200-mesh sieve. (b) The fineness test shall be made as specified in section 12.

6. *Constancy of Volume.* (a)—A pat of mortar, covered with a skim coat of neat paste shall be subjected to the action of steam. If the steam has no visible effect on the pat, the sample shall be reported as being "sound." If the pat disintegrates, the sample shall be reported "unsound" and the shipment rejected. If the sample cracks, pops, or shows other minor defects, it shall not be reported as either sound or unsound but its behavior shall be noted. (b) The constancy of volume test shall be made as specified in section 13.

III. Packing and Marking.

7. *Packing.* (a)—*Kind of Package.*—The hydrated lime shall be packed in either cloth or paper bags. (b) *Size of Package.*—The cloth package shall contain 100 pounds, net weight of hydrated lime. The paper package shall contain 50 pounds, net weight, of hydrated lime.

8. *Marking.*—Each package shall be clearly marked to show the net weight of hydrated lime contained in the package, the name of the manufacturer, and the name of the brand, if any

IV. Inspection and Rejection.

9. *Inspection.* (a)—All hydrated lime shall be subject to inspection. (b) Hydrated lime may be inspected either at the place of manufacture or the point of delivery, as arranged at the time of purchase. (c) The manufacturer shall furnish the inspector all reasonable facilities for inspection and sampling, which shall be so conducted as not to interfere with the operation of the works. (d) The purchaser may make the tests to govern the acceptance or rejection of the hydrated lime in his own laboratory or elsewhere. Such tests, however, shall be made at the expense of the purchaser.

10. *Rejection.*—Unless otherwise specified, any rejection based on failure to pass tests prescribed in these specifications shall be reported with in 5 working days from the taking of samples.

11. *Rehearing.*—Samples which represent rejected hydrated lime shall be preserved in air-tight containers for 5 days from the date of the test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

V. Methods of Test.

12. *Method for Determining Fineness.*—Fineness of hydrated lime shall be determined as follows:

Place 100-g of the sample as received on a standard 30-mesh sieve having openings averaging 0.0198 inch. This sieve shall be nested above a standard 200-mesh sieve having openings averaging 0.0029 inch. Wash the material by means of a stream of water from a faucet. A small piece of rubber tubing attached to a water faucet will be found convenient. The velocity of the stream of water can be increased by pinching the tubing, but it should not be sufficient to cause any danger of splashing the sample over the sides of the sieve. Continue the washing until the water coming through the sieve is clear. Then dry the residue upon the 30-mesh sieve to constant weight in a drying oven whose temperature is maintained between 100 and 120 degrees C. in an atmosphere free from carbon dioxide. Calculate the weight of this residue as percentage of the original sample. Then wash the material which has passed the 30-mesh sieve and remained on the 200-mesh sieve through the latter as described above. Treat the residue on this sieve in the same manner as described above for the 30-mesh sieve and add the percentage retained to the percentage residue on the 30-mesh sieve. The sum of these two shall be reported as the residue on the 200-mesh sieve.

13. *Methods for Determining Constancy of Volume.*—Constancy of volume shall be determined as follows:

To 20 g. of the sample add 100 g. of clean, washed, graded sand which shall all pass the No. 20 sieve and which shall all be retained on the No. 100 sieve. Mix thoroughly and add enough water to make a good plastic mortar of a rather dry consistency. Spread out on a clean glass plate, to form a layer about one-eighth inch thick by about 4 inches square. The pat shall be of even thickness throughout, and not tapering at the edges. If the mortar is too dry to work well, add more water. Place this pat in a closet to set for 24 hours. The temperature in the closet should be between 65 and 75 degrees F., and there should be free circulation of air in the closet, without allowing any direct draft to hit the pat. At the end of 24 hours remove the pat from the closet and soak it in water, until a film of water stand unabsorbed on the surface of the pat. Examine the pat carefully for cracks. If any are found, too much water was used in making the pat, and it should be discarded and a new one made.

Mix 20 g. of the sample with enough water to form a thick cream. Spread this out in a thin layer on the surface of the pat. Let it stand for 15 minutes to permit possible air bubbles to form. Trowel to a smooth, even surface, making this skim coat as thin as possible without allowing the sand to show through. Put the pat back in the closet for another 24 hours, so that the skim coat can set. Examine carefully to insure the absence of any cracks or pops. Provide a vessel partially filled with cold water and having a perforated cover. Suspend the pat in this vessel in such a way that the water can boil without touching it. Gradually bring the water to a boil, and keep it boiling gently for 5 hours, the pat being surrounded by steam during this time. Turn out the fire and permit the water to cool for at least 12 hours before the cover is removed from the vessel. The pat is then removed and examined for cracking, popping, or disintegration.

Specifications for Building Brick. (3g)—(*American Society for Testing Material Specification* C 21–20).

I. *Standard Size.*—1. The standard size of building brick shall be 2¼x3¾x8 inches.

II. *Sampling.*—2. For the purpose of tests, bricks shall be selected by an experienced person so as to represent the commercial product. All bricks shall be carefully examined and their condition noted before being subjected to any kind of test. For the purpose of the tests 10 bricks will be required; they shall be thoroughly dried to constant weight in a suitable oven at a temperature of from 225 degrees F. (107 degrees C.) to 250 degrees F. (121 degrees C.).

III. *Physical Tests.*—3. Absorption. (a) At least five dry bricks shall be weighed and completely submerged in water at a temperature between 60 and 80 degrees F., the water heated to boiling within one hour, boiled continuously for five hours, and then allowed to cool in the water to a temperature between 60 and 80 degrees F. They shall then be removed, the surface water wiped off with a damp cloth, and the brick quickly weighed.

(b) The percentage of absorption shall be computed on the dry weight, according to the relation:

$$\text{Percentage of absorption} = \frac{100\,(B-A)}{A}$$

where A = weight of dry brick, and B = weight of saturated brick.

4. Compression Tests. (a) Compression tests shall be made on at least five half bricks, previously dried, each taken from a different brick. The half brick shall be prepared either by sawing or cutting upon a yielding bed with a sharp mason's chisel, which shall be the full width of the brick. The specimen shall be tested on edge. To secure a uniform bearing in the testing machine the edge surfaces shall be bedded in a thin coat of plaster of Paris spread upon plate glass previously coated with a film of oil. Before applying the plaster of Paris, the bearing surface of the brick shall receive a coating of shellac. The brick shall be pressed firmly upon the surface, making the layer as thin as possible, and remain undisturbed until set. The depression of recessed or paneled bricks shall be filled with neat Portland-cement mortar, which shall stand at least 24 hours before testing.

(b) The machine used for the compression tests shall be equipped with a spherical bearing block kept thoroughly lubricated to insure accurate adjustment, which should be made by hand under a small initial load. During the test the beam of the testing machine shall be kept constantly in a floating position.

(c) The breaking load shall be divided by the area in compression and the results reported in pounds per square inch.

5. Transverse Tests.—(a) At least five bricks, previously dried, shall be tested, laid flatwise, with a span of 7 inches, and with the load applied at midspan. The knife-edges shall be slightly curved in the direction of their length. Steel bearing plates, about ¼ inch thick by 1½ inches wide, may be placed between the knife-edges and the brick. The use of a wooden base block, slightly rounded transversely across its top, upon which to rest the lower knife-edges, or the form of lower knife-edge shown in Fig. 2, is recommended. If the knife-edges shown in Fig. 2 are used, they should rest upon smooth-plane blocks of wood at least 2 inches thick.

(b) The modulus of rupture shall be computed in pounds per square inch by the following formula:

$$R = \frac{3Wl}{2\,bd^2}$$

in which l = the distance between supports in inches, b = the breadth and d = depth of the brick in inches, and W = the load in pounds at which the brick failed.

6. Record of Test Results. In recording the results of the test the type of brick shall be defined, whether stiff mud, soft mud, dry pressed, repressed, sand-lime, or other types. It is recommended that the data obtained be recorded as indicated on the accompanying "Laboratory Record."

IV. *Classification of Bricks.*—7. (a) According to the results of the physical tests, the bricks shall be classified as vitrified, hard, medium, and soft bricks, on the basis of the following requirement:

Name of grade.	Absorption limits.		Compressive strength (on edge).		Modulus of rupture.	
	Mean of 5 tests.	Individual maximum.	Mean of 5 tests.	Individual minimum.	Mean of 5 tests.	Individual minimum.
	Per cent.	*Per cent.*	*Lbs./in.*[2]	*Lbs./in.*[2]	*Lbs./in.*[2]	*Lbs./in.*[2]
Vitrified brick	5 or less	6.0	5000 or over	4000	1200 or over	800
Hard brick	5 to 12	15.0	3500 or over	2500	600 or over	400
Medium brick	12 to 20	24.0	2000 or over	1500	450 or over	300
Soft brick	20 or over	no limit	1000 or over	800	300 or over	200

(2) The standing of any set of bricks shall be determined by that one of the three requirements in which it is lowest.

Welded Steel Connections. (13b)—(*Technologic Paper of the Bureau of Standards No. 179, "Electric-Arc Welding of Steel: 1.* Properties of the Arc-Fused Metal," by Henry S. Rawdon, Physicist; Edward C. Groesbeck, Physical Chemist; and Louis Jordan, Associate Chemist.)

The daily advances in the variety and number of applications of electric welding bespeak the continually increasing industrial importance of this method of joining and repairing metals. Of the two forms of electric welding in common industrial use, the arc-fusion method is of far more general application than is electrical-resistance welding; arc welding, as is evident from its nature, can be applied in a multitude of ways to as many different welding projects, while the second method, which depends upon the contact resistance of the two parts which are to be joined together, finds its greatest applications in "repeat" welding.

Resistance welding is closely related to the familiar weld of the smith's forge in that the two surfaces to be joined are heated to the welding temperature, the electric current being the source of the necessary heat, and then pressed into intimate contact while hot. The principle of arc welding, however, is very different; the two parts are joined together by fusion, the fused metal being supplied from an outside source rather than from the parts which are to be welded. Often the addition of a very considerable amount of metal is necessary, which metal is supplied by the fusion accomplished by means of the heat of the electric arc. A layer of considerable thickness often exists between the two parts joined together.

The results of the investigation relate principally to the nature and characteristic properties of the weld, and in particular those of the "fused-in" metal. Since the metal of any weld produced by the electric arc-fusion is essentially a casting, it is apparent that the efficiency of the weld is dependent upon the properties of this arc-fused metal. Hence a knowledge of its properties is of fundamental importance in the study of electric-arc welds.

While the weld is essentially a casting, the conditions for its production are very different from those ordinarily employed in the making of steel castings. The metal loses many of the properties it possesses when in wrought form, and hence it is not to be expected that a fusion weld made by any process whatever will have all the properties that metal of the same composition would have when in the forged or rolled condition.

The peculiar conditions under which the fusion took place also render the metal of the weld quite different from similar metal melted and cast in the usual manner. It is seemingly impossible to fuse the metal without serious imperfections. The mechanical properties of the metal are dependent, therefore, to an astonishing degree upon the skill, care and patience of the welding operator.

In arc-fusion welds in general, the mass of weld metal is in intimate contact with the parts which are being welded, so that it is claimed by many that because of the diffusion and intermingling of the metal under repair with that of the weld the properties of the latter are somewhat improved. A comparison of some of the results of tests somewhat support this claim.

It appears from the results obtained that the two types of electrodes used—that is, "pure" iron and low-carbon steel, should give very similar results in practical welding. This is due to the changes which occur during the melting, so that the resulting fusions are essentially of the same composition. The use of a slight coating on the electrodes does not appear to be of any material advantage so far as the properties of the resulting fused metal are concerned. It also appears that any difference in results obtained with direct current apparently depends upon the relative ease of manipulation during welding rather than any intrinsic effect of the current upon properties of the metal.

Fence Posts. (19)—(*Technical Note No. 135, Forest Products Laboratory.*) A split fence post is as durable as a round post provided the amount of heart wood is the same in both. Posts of spruce, hemlock, or any of the true firs are exceptions to this rule, because their heartwood and sapwood are about equally durable.

When posts are to be treated with creosote or other preservative. a round post is preferable to a split post, because of the comparative ease with which the sapwood can be treated. The heart faces on split posts do not, as a rule, absorb preservative well. Split red-oak posts will take treatment, because the wood is very porous, but the heart faces of split posts of many other species, notably white oak, red gum, and Douglas fir, resist the penetration of preservative, even under heavy pressures.

Nails and Nailing. (27a)—(*Technical Note No. 134, Forest Products Laboratory.*) Nails driven in holes slightly (1–32 to 1–16 inch) smaller than their diameter have considerably more resistance both to direct pull and to shear than nails driven without holes. Cement coated nails are superior to uncoated nails. Length of nails should be somewhat more than twice the thickness of the member holding the heads. Slender nails are likely to hold better than thick nails under the repeated shocks and constant weaving action to which crates are subjected, because the slender nail bends near the surface of the pieces joined without loosening the friction grip towards the point.

Physical Properties of Materials. (15)—(*Bureau of Standards Circular No. 101. Fifty-two pages. Size 7" x 10".*) In this circular is assembled data relative to the physical properties of material that heretofore has not been conveniently accessible in any one publication. The numerical values given represent a testing engineer's selection of the most probable of the values given by variou. authorities.

Tables are given of the tensile strength, elongation, reduction of area, hardness, composition, compressive strength, density, ductility, modulus of elasticity, strength in shear and transverse strength of iron and iron alloys and similar tables for carbon steels, alloy steels, steel wire, steel wire rope, aluminum, aluminum alloys, copper, copper allows, copper wire, and various miscellaneous metals and alloys.